GEL Laboratories LLC
a member of The GEL Group INC

PO Box 30712 Charleston, SC 29417
2040 Savage Road Charleston, SC 29407
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November 16, 2015

Mr. Scot Fitzgerald
CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352

Re: CHPRC SAF F15-011
Work Order: 384871
SDG: GEL384871

Dear Mr. Fitzgerald:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 05, 2015. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 4505.

Sincerely,

Sarah Edwards for
Heather Shaffer
Project Manager

Purchase Order: 302632 8C
Chain of Custody: F15-011-407, F15-011-414, F15-011-417, F15-011-418, F15-011-420, F15-011-421, F15-011-424, F15-011-425, F15-011-428 and F15-011-429
Enclosures

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Case Narrative

General Narrative
for
CH2MHill Plateau Remediation Company
CHPRC SAF F15-011
SDG: GEL384871

November 16, 2015

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary

Sample receipt

The sample(s) arrived at GEL Laboratories, LLC, Charleston, South Carolina on November 05, 2015, for analysis. The samples were delivered with proper chain of custody documentation and signatures. All sample containers arrived without any visible signs of tampering or breakage. There are no additional comments concerning sample receipt.

Items of Note All efforts were made by the lab to meet any short hold times. Samples that were analyzed outside of the initial hold time but still within 2X hold time will be noted in the lab case narrative and DER.

Sample Identification
The laboratory received the following samples:

Laboratory Identification	Sample Description
384871001	B33BX1
384871002	B33BW4
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
384871007	B33BY2
384871008	B33BY6
384871009	B33BX5
384871010	B33BX8

Case Narrative

Sample analyses were conducted using methodology as outlined in GEL Laboratories, LLC (GEL) Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

Data Package

The enclosed data package contains the following sections: General Narrative, Chain of Custody and Supporting Documentation, and data from the following fractions: Diesel Range Organics, GC Semivolatile PCB, GC/MS Semivolatile, GC/MS Volatile, General Chemistry, Metals and Radiochemistry.

This package, to the best of my knowledge, is in compliance with the SOW, both technically and for completeness, including a full description of, explanation of, and corrective actions for, any and all deviations, from either the analyses requested or the case narrative requested. Release of the data contained in this hard copy data package has been authorized by the Laboratory Analytical Manager (or designee) and the laboratory's client services representative as verified by their signatures on this report.

Sarah Edwards for
Heather Shaffer
Project Manager

SAMPLE ISSUE RESOLUTION

SIR NUM	SIR16-091
REV NUM	0
DATE INITIATED	11/12/2015

SAMPLE EVENT INFORMATION

SAF NUM(S)	F15-011
OPERABLE UNIT(S)	200-DV-1
PROJECT(S)	200-DV-1
SAMPLE EVENT TITLE(S)	200-DV-1 OU Waste Sites
LABORATORY	GEL Laboratories, LLC

SAMPLING INFORMATION

NUMBER OF SAMPLES	2
SAMPLE NUMBERS	B33BX4, B33BX5
SAMPLE MATRIX	SOIL
COLLECTION DATE	11/4/2015 - 11/4/2015
SDG NUM	GEL384871

ISSUE BACKGROUND

CLASS	Chain of Custody Issue (Field)
TYPE	Sample Depth Data is Missing or Not Marked NA
DESCRIPTION	COC # F15-011-417, Sample B33BX4. COC # F15-011-418, Sample B33BX5. Missing SAMPLE DEPTH.

DISPOSITION

DESCRIPTION	DOCUMENT AND CLOSE
JUSTIFICATION	DOCUMENT AND CLOSE
	SUBMITTED BY: Gayelyn Gibson DATE: 11/10/2015 ACCEPTED BY: Kirsten Killand DATE: 11/12/2015

Chain of Custody and Supporting Documentation

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-407	PAGE 1 OF 1
COLLECTOR D.E. WIGHT/CHPRC	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8C; **AIR QUALITY** ☐	**DATA TURNAROUND** 15 Days / 15 Days
SAMPLING LOCATION C9490, I-003	**PROJECT DESIGNATION** 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		**SAF NO.** F15-011		
ICE CHEST NO. GWS-429	**FIELD LOGBOOK NO.** HNF-N-507-33/15	**ACTUAL SAMPLE DEPTH** 10.0 to 12.0 Ft	**COA** 302632	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6108		**BILL OF LADING/AIR BILL NO.** 7748 9971 6110		

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BW3~~ 11-3-15

PRESERVATION	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	5035/8260_VOA : LOW LEVEL: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B33BW4	SOIL	11-3-15	1210	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	** All VOA samples will be collected using EPA Method 5035A and will include 5 bottles for low level analysis.** The laboratory is to use one of the low level VOA bottles for moisture content determination.** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be included as part of the sample ID reported in the final data packages. TRVL-16-006
D.E. WIGHT/CHPRC	11-3-15 1309	SSU-1	11-3-15 1309	
SSU-1	NOV 04 2015 1000	L.D. Wall CHPRC	NOV 04 2015 1000	
L.D. Wall CHPRC	NOV 04 2015 1402	FEDEX		
FedEx		Sarah Edwards	11.5.15 0900	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	**RECEIVED BY**	**TITLE**	**DATE/TIME**
FINAL SAMPLE DISPOSITION	**DISPOSAL METHOD**	**DISPOSED BY**	**DATE/TIME**

PRINTED ON 10/8/2015 **FSR ID = FSR7770** **TRVL NUM = TRVL-16-006** A-6003-618 (REV 2)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: C9490 I-003 F15-011-407

Sampler Initials and Date: SR 11-3-15

Sample Number [1]	Sample Suffix	Initial Weight [2] (grams)	Total Weight [3] (grams)	Soil Weight [4] (grams)
B33BW4	K	29.40	35.87	6.47
↑	L	29.40	36.45	7.05
↓	M	28.86	35.65	6.79
	N	29.43	36.16	6.73
B33BW4	P	28.95	36.23	7.28

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 381155		F15-011-414	PAGE 1 OF 1
COLLECTOR: D.E. WIGHT/CHPRC	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D 384871	PRICE CODE: 8C; DATA TURNAROUND: 15 Days / 15 Days; AIR QUALITY: ☐
SAMPLING LOCATION: ~~FXR-3~~ 11-3-15 FXR-3	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO.: F15-011	
ICE CHEST NO.: 6WS-429	FIELD LOGBOOK NO.: ITNF-N-507-33	ACTUAL SAMPLE DEPTH: N/A	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS; ORIGINAL
SHIPPED TO: GEL Laboratories, LLC	OFFSITE PROPERTY NO.: 6108		BILL OF LADING/AIR BILL NO.: 7748 9971 6110	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS: *Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE

PRESERVATION	Frozen/Cool <-7C and >-20C
HOLDING TIME	14 Days
TYPE OF CONTAINER	aGs
NO. OF CONTAINER(S)	5
VOLUME	40mL
SAMPLE ANALYSIS	5035/8260_VOA : LOW LEVEL: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B33BX1	SOIL	11-3-15	1210	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: D.E. WIGHT/CHPRC — DATE/TIME: 11-3-15 1309	RECEIVED BY/STORED IN: SSU-1 — DATE/TIME: NOV 03 2015 1309	** All VOA samples will be collected using EPA Method 5035A and will include 5 bottles for low level analysis.** The laboratory is to use one of the low level VOA bottles for moisture content determination.** VOA bottles will be labeled with an appended suffix of K, L, M, N, or P. These suffixes are for the purpose of providing bottle weights to the laboratories. These suffixes should not be included as part of the sample ID reported in the final data packages. TRVL-16-006
RELINQUISHED BY/REMOVED FROM: SSU-1 — DATE/TIME: NOV 04 2015 1000	RECEIVED BY/STORED IN: CHPRC L.D. Wall — DATE/TIME: NOV 04 2015 1000	
RELINQUISHED BY/REMOVED FROM: L.D. Wall CHPRC — DATE/TIME: NOV 04 2015 1400	RECEIVED BY/STORED IN: FEDEX — DATE/TIME: 0900	
RELINQUISHED BY/REMOVED FROM: FedEx — DATE/TIME:	RECEIVED BY/STORED IN: Sarah Edwards — DATE/TIME: 11.5.15/0900	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 | FSR ID = FSR7772 | TRVL NUM = TRVL-16-006 | A-6003-618 (REV 2)

SAMPLE RECORD SHEET FOR VOC SAMPLE COLLECTION

Location: FXR-3

Sampler Initials and Date: EWK 11-3-15

Sample Number [1]	Sample Suffix	Initial Weight [2] (grams)	Total Weight [3] (grams)	Soil Weight [4] (grams)
B33BX1	K	29.05	37.02	7.97
↑	L	28.71	35.41	6.70
	M	29.37	36.94	7.57
↓	N	28.45	34.70	6.25
B33BX1	P	29.20	36.38	7.18

[1] Enter sample number associated with the sampling event.

[2] Initial weight is to include all labels, stickers, bags, spin bars (for samples with suffix K, L, M, N and P) and anything else that will be associated with the bottle when it is weighed with the sample.

[3] Ensure that everything weighed for the empty bottle and no additional items (besides the sample) is weighed.

[4] Soil weight is the vial with sample minus Initial Weight.

A-6005-526 (REV 0)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-417	PAGE 1 OF 2
COLLECTOR D Wright CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C / DATA TURNAROUND
SAMPLING LOCATION C9489, I-001	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	AIR QUALITY ☐ / 15 Days / 15 Days
ICE CHEST NO. 6605-428	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH FT	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS / ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 6108		BILL OF LADING/AIR BILL NO. 7748 9971 6007	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BX3~~ EH 11-4-15

PRESERVATION			None	None	Cool <=6C
HOLDING TIME			6 Months	6 Months	14 Days
TYPE OF CONTAINER			G/P	G/P	G
NO. OF CONTAINER(S)			1	1	1
VOLUME			60mL	250mL	60mL
SAMPLE ANALYSIS			SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	9010_CYANIDE: COMMON;
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B33BX4	SOIL	11-4-15	0750	✓	✓	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
D. Wright CHPRC	11-4-15 1045	L.D. Wall CHPRC	11-4-15 1045	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
L.D. Wall	NOV 04 2015 1400	FEDEX		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
FedEx		Sarah Edwards	11.5.15/0900	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 FSR ID = FSR7774 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F15-011-417	PAGE 2 OF 2
COLLECTOR D. Wright chrec	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8C **AIR QUALITY** ☐	**DATA TURNAROUND** 15 Days / 15 Days
SAMPLING LOCATION C9489, I-001	**PROJECT DESIGNATION** 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		**SAF NO.** F15-011		
ICE CHEST NO. 6005-428	**FIELD LOGBOOK NO.** HNF-N-641-2/91	**ACTUAL SAMPLE DEPTH**	**COA** 302632	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6108		**BILL OF LADING/AIR BILL NO.** 7748 9971 6007		

SPECIAL INSTRUCTIONS

TRVL-16-007 ** Sample material used for GEA may be used to supplement sample mass required for other radiological tests. GEA data will be reported to CHPRC for review prior to proceeding with the remaining radiological tests.
(1) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010_METALS_ICP: COMMON {Antimony, Silver}; 7471_MERCURY_CV: COMMON (SOLIDS);
(2) GAMMA_GS: COMMON; AMCMISO_IE_PRECIP_AEA: COMMON; PUISO_PLATE_AEA: COMMON {Plutonium-238, Plutonium-239/240}; UISO_PLATE_AEA: COMMON {Uranium-233/234, Uranium-235, Uranium-238}; C14_LSC: COMMON; ~~I129_SEP_LEPS_GS: COMMON~~; NI63_LSC: COMMON; NP237_IE_PRECIP_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON {Total beta radiostrontium}; TC99_EIE_LSC: COMMON; TRITIUM_DIST_LSC: COMMON;

SD 10-13-15

PRINTED ON 10/8/2015 FSR ID = FSR7774 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-418	PAGE 1 OF 1
COLLECTOR D Wright CHPRC	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C / DATA TURNAROUND
SAMPLING LOCATION C9489, I-001 GW5-428	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	AIR QUALITY ☐ / 15 Days / 15 Days
ICE CHEST NO.	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 6108		BILL OF LADING/AIR BILL NO. 7748 9971 6007	

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION	Cool <=6C
		HOLDING TIME	28 Days/48 Hours
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	60mL
	SPECIAL HANDLING AND/OR STORAGE ~~RADIOACTIVE TIE TO: B33BX3~~ EM 11-4-15	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B33BX5	SOIL	11-4-15	0750	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES			
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	SPECIAL INSTRUCTIONS
D. Wright CHPRC	11-4-15 1045	L.D. Wall CHPRC	11-4-15 1045	TRVL-16-007 ** Sample material used for GEA may be used to supplement sample mass required for other radiological tests. GEA data will be reported to CHPRC for review prior to proceeding with the remaining radiological tests. (1) 9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
L.D. Wall CHPRC	NOV 04 2015 1400	FEDEX		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
FedEx		Sarah Edwards	11.5.15/0900	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 | FSR ID = FSR7774 | TRVL NUM = TRVL-16-007 | A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-420	PAGE 1 OF 2
COLLECTOR: D. Wright CHPRC	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 8C; DATA TURNAROUND: 15 Days / 15 Days; AIR QUALITY: ☐
SAMPLING LOCATION: C9489, I-002	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO.: F15-011	
ICE CHEST NO.: 6605-428	FIELD LOGBOOK NO.: HNF-N-645-2/51	ACTUAL SAMPLE DEPTH: 7.0 to 9.5 FT	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS; ORIGINAL
SHIPPED TO: GEL Laboratories, LLC	OFFSITE PROPERTY NO.: 6108		BILL OF LADING/AIR BILL NO.: QW. 11/4/15 7748 ~~9977~~ 6007 9971	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BX6~~ SC 11-4-15

PRESERVATION	None	None	Cool <=6C
HOLDING TIME	6 Months	6 Months	14 Days
TYPE OF CONTAINER	G/P	G/P	G
NO. OF CONTAINER(S)	1	1	1
VOLUME	60mL	250mL	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	9010_CYANIDE: COMMON;

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME			
B33BX7	SOIL	11-4-15	0820	✓	✓	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: D Wright CHPRC — DATE/TIME: 11-4-15 1045	RECEIVED BY/STORED IN: L.D. Wall CHPRC — DATE/TIME: 11-4-15 1045	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: L.D. Wall CHPRC — DATE/TIME: NOV 04 2015 1400	RECEIVED BY/STORED IN: FEDEX — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: FedEx — DATE/TIME:	RECEIVED BY/STORED IN: Sarah Edwards — DATE/TIME: 11.5.15/0900	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 | FSR ID = FSR7775 | TRVL NUM = TRVL-16-007 | A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-420	PAGE 2 OF 2
COLLECTOR D. Wright chpec	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C AIR QUALITY ☐
SAMPLING LOCATION C9489, I-002	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	DATA TURNAROUND 15 Days / 15 Days
ICE CHEST NO. 605-428	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH 7.0 to 9.5 FT	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 6108		BILL OF LADING/AIR BILL NO. 7748 9989971 6007 DW 11/4/15	

SPECIAL INSTRUCTIONS

TRVL-16-007
(1) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010_METALS_ICP: COMMON {Antimony, Silver}; 7471_MERCURY_CV: COMMON (SOLIDS);
(2) GAMMA_GS: COMMON; AMCMISO_IE_PRECIP_AEA: COMMON; PUISO_PLATE_AEA: COMMON {Plutonium-238, Plutonium-239/240}; UISO_PLATE_AEA: COMMON {Uranium-233/234, Uranium-235, Uranium-238}; C14_LSC: COMMON; ~~I129_SEP_LEPS_GS: COMMON~~; NI63_LSC: COMMON; NP237_IE_PRECIP_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON {Total beta radiostrontium}; TC99_EIE_LSC: COMMON;) TRITIUM_DIST_LSC: COMMON;

BD 10-13-15

PRINTED ON 10/8/2015 FSR ID = FSR7775 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871			F15-011-421	PAGE 1 OF 1
COLLECTOR: D. Wright	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 8C	DATA TURNAROUND: 15 Days / 15 Days
SAMPLING LOCATION: C9489, I-002	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO.: F15-011	AIR QUALITY: ☐	
ICE CHEST NO.: 6WS-428	FIELD LOGBOOK NO.: HNF-N-645-51	ACTUAL SAMPLE DEPTH: 7.0 to 9.5 FT	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS	ORIGINAL
SHIPPED TO: GEL Laboratories, LLC	OFFSITE PROPERTY NO.: 6108		BILL OF LADING/AIR BILL NO.: 7748 9971 6007		

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BX6~~ 11-4-15 EL

PRESERVATION	Cool <=6C
HOLDING TIME	28 Days/48 Hours
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B33BX8	SOIL	11-4-15	0820	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	
RELINQUISHED BY/REMOVED FROM: D. Wright per chpl — DATE/TIME: 11-4-15 1045	RECEIVED BY/STORED IN: L.D. Wall — DATE/TIME: 11-4-15 1045	
RELINQUISHED BY/REMOVED FROM: L.D. Wall — DATE/TIME: NOV 04 2015 1400	RECEIVED BY/STORED IN: CHPRC FEDEX — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: FedEx — DATE/TIME:	RECEIVED BY/STORED IN: Sarah Edwards Sarah Edwards — DATE/TIME: 11.05.15/0900	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	

SPECIAL INSTRUCTIONS
TRVL-16-007
(1) 9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 FSR ID = FSR7775 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871			F15-011-424	PAGE 1 OF 2
COLLECTOR D. Wight	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND 15 Days / 15 Days
SAMPLING LOCATION C9489, I-003	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	AIR QUALITY ☐	
ICE CHEST NO. GWS-428	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH ~~10.0~~ 10.1 to 12.6 ft	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 60108		BILL OF LADING/AIR BILL NO. 7748 9971 6007		

MATRIX* A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BX9~~ 11-4-15

PRESERVATION	Cool <=6C	Cool <=6C	Cool <=6C	None	Cool <=6C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	6 Months
TYPE OF CONTAINER	aG	aG	aG	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1
VOLUME	60mL	60mL	60mL	60mL	60mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON; WTPH_DIESEL: COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B33BY1	SOIL	11-4-15	0905	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION	DATE/TIME	SIGN/ PRINT NAMES RECEIVED BY/STORED IN	DATE/TIME
RELINQUISHED BY/REMOVED FROM D. Wight	11-4-15 1045	L.D. Wall	11-4-15 1400
RELINQUISHED BY/REMOVED FROM L.D. Wall	NOV 0 4 2015 1400	FEDEX	
RELINQUISHED BY/REMOVED FROM FedEx		Sarah Edwards	11.5.15/0900
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	
RELINQUISHED BY/REMOVED FROM		RECEIVED BY/STORED IN	

SPECIAL INSTRUCTIONS
SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 FSR ID = FSR7776 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		F15-011-424	PAGE 2 OF 2
COLLECTOR: Dwight	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 8C; DATA TURNAROUND
SAMPLING LOCATION: C9489, I-003	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO.: F15-011	AIR QUALITY: ☐; 15 Days / 15 Days
ICE CHEST NO.: GWS-428	FIELD LOGBOOK NO.: HNF-N-645-2/91	ACTUAL SAMPLE DEPTH: 10.1 to 12.6 FT	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS; ORIGINAL
SHIPPED TO: GEL Laboratories, LLC	OFFSITE PROPERTY NO.: 6108		BILL OF LADING/AIR BILL NO.: 7748 9971 6007	

SPECIAL INSTRUCTIONS

TRVL-16-007
(1) 8270_SVOA_GCMS: COMMON; 8270_SVOA_GCMS: CH 01; 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate};
(2) 8082_PCB_GC: COMMON; 8082_PCB_GC: COMMON (Add-on) {Aroclor-1262, Aroclor-1268};
(3) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010_METALS_ICP: COMMON {Antimony, Silver}; 7471_MERCURY_CV: COMMON (SOLIDS);
(4) 7196_CR6: COMMON; 350.1_AMMONIA: COMMON; 9010_CYANIDE: COMMON;
(5) GAMMA_GS: COMMON; AMCMISO_IE_PRECIP_AEA: COMMON; PUISO_PLATE_AEA: COMMON {Plutonium-238, Plutonium-239/240}; UISO_PLATE_AEA: COMMON {Uranium-233/234, Uranium-235, Uranium-238}; C14_LSC: COMMON; I129_SEP_LEPS_GS: COMMON; NI63_LSC: COMMON; NP237_IE_PRECIP_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON {Total beta radiostrontium}; TC99_EIE_LSC: COMMON; TRITIUM_DIST_LSC: COMMON;

PRINTED ON 10/8/2015 FSR ID = FSR7776 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871			F15-011-425	PAGE 1 OF 1
COLLECTOR D. Wright	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C	DATA TURNAROUND
SAMPLING LOCATION C9489, I-003	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	AIR QUALITY ☐	15 Days / 15 Days
ICE CHEST NO. GWS-428	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH 10.1 to 12.6 FT	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS	ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 6108		BILL OF LADING/AIR BILL NO. 7748 9971 6007		

MATRIX*	POSSIBLE SAMPLE HAZARDS/ REMARKS		
A=Air DL=Drum Liquids DS=Drum Solids L=Liquid O=Oil S=Soil SE=Sediment T=Tissue V=Vegetation W=Water WI=Wipe X=Other	*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA	PRESERVATION	Cool <=6C
		HOLDING TIME	28 Days/48 Hours
		TYPE OF CONTAINER	G/P
		NO. OF CONTAINER(S)	1
		VOLUME	60mL
	SPECIAL HANDLING AND/OR STORAGE ~~RADIOACTIVE TIE TO: B33BX9~~ 11-4-15	SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	
B33BY2	SOIL	11-4-15	0905	✓

CHAIN OF POSSESSION		SIGN/ PRINT NAMES		SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	TRVL-16-007
D. Wright CH2M	11-4-15 1045	L.D. Wall	11-4-15 1045	(1) 9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
L.D. Wall CHPRC	NOV 04 2015 1400	FEDEX		
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
FedEx		Sarah Edwards	11.5.15/0900	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	
RELINQUISHED BY/REMOVED FROM	DATE/TIME	RECEIVED BY/STORED IN	DATE/TIME	

LABORATORY SECTION	RECEIVED BY		TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD		DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 FSR ID = FSR7776 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-428	PAGE 1 OF 2
COLLECTOR: D. Wright	COMPANY CONTACT: TODAK, D	TELEPHONE NO.: 376-6427	PROJECT COORDINATOR: TODAK, D	PRICE CODE: 8C; AIR QUALITY: ☐; DATA TURNAROUND: 15 Days / 15 Days
SAMPLING LOCATION: C9489, I-003 FTB	PROJECT DESIGNATION: 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO.: F15-011	
ICE CHEST NO.: GWS-428	FIELD LOGBOOK NO.: HNF-N-645-2/91	ACTUAL SAMPLE DEPTH: (N/A)	COA: 302632	METHOD OF SHIPMENT: FEDERAL EXPRESS; ORIGINAL
SHIPPED TO: GEL Laboratories, LLC	OFFSITE PROPERTY NO.: 6108		BILL OF LADING/AIR BILL NO.: 7748 9971 6007	

MATRIX*: A=Air, DL=Drum Liquids, DS=Drum Solids, L=Liquid, O=Oil, S=Soil, SE=Sediment, T=Tissue, V=Vegetation, W=Water, WI=Wipe, X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA LD 10-13-15

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BY3~~ LD 10-13-15

PRESERVATION	Cool <=6C	Cool <=6C	Cool <=6C	None	Cool <=6C	None
HOLDING TIME	14/40 Days	14/40 Days	1 yr/1 yr	6 Months	30 Days	6 Months
TYPE OF CONTAINER	aG	aG	aG	G/P	G/P	G/P
NO. OF CONTAINER(S)	1	1	1	1	1	1
VOLUME	60mL	60mL	60mL	60mL	60mL	250mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS	WTPH_KEROSENE: COMMON; WTPH_DIESEL: COMMON;	SEE ITEM (2) IN SPECIAL INSTRUCTIONS	SEE ITEM (3) IN SPECIAL INSTRUCTIONS	SEE ITEM (4) IN SPECIAL INSTRUCTIONS	SEE ITEM (5) IN SPECIAL INSTRUCTIONS
SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME						
B33BY5	SOIL	11-4-15	0900	✓	✓	✓	✓	✓	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES	SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: D. Wright (ChPac) — DATE/TIME: 11-4-15 1045	RECEIVED BY/STORED IN: L.D. Wall — DATE/TIME: 11-4-15 1045	SEE PAGE 2 FOR ALL SPECIAL INSTRUCTIONS
RELINQUISHED BY/REMOVED FROM: L.D. Wall — DATE/TIME: NOV 04 2015 1400	RECEIVED BY/STORED IN: ~~FEDEX~~ — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: Fed Ex — DATE/TIME:	RECEIVED BY/STORED IN: Sarah Edwards — DATE/TIME: 11.5.15/0900	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: — DATE/TIME:	RECEIVED BY/STORED IN: — DATE/TIME:	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 FSR ID = FSR7777 TRVL NUM = TRVL-16-007 A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST			F15-011-428	PAGE 2 OF 2
COLLECTOR D. Wright	**COMPANY CONTACT** TODAK, D	**TELEPHONE NO.** 376-6427	**PROJECT COORDINATOR** TODAK, D	**PRICE CODE** 8C	**DATA TURNAROUND**
SAMPLING LOCATION C9489, I-003 FTB	**PROJECT DESIGNATION** 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		**SAF NO.** F15-011	**AIR QUALITY** ☐	15 Days / 15 Days
ICE CHEST NO. 6605-428	**FIELD LOGBOOK NO.** HNF-N-645-2/81	**ACTUAL SAMPLE DEPTH** (N/A)	**COA** 302632	**METHOD OF SHIPMENT** FEDERAL EXPRESS	**ORIGINAL**
SHIPPED TO GEL Laboratories, LLC	**OFFSITE PROPERTY NO.** 6108		**BILL OF LADING/AIR BILL NO.** 7748 9971 6007		

SPECIAL INSTRUCTIONS

TRVL-16-007
(1) 8270_SVOA_GCMS: COMMON; 8270_SVOA_GCMS: CH 01; 8270_SVOA_GCMS: COMMON (Add-on) {Tributyl phosphate};
(2) 8082_PCB_GC: COMMON; 8082_PCB_GC: COMMON (Add-on) {Aroclor-1262, Aroclor-1268};
(3) 6020_METALS_ICPMS: COMMON {Aluminum, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Molybdenum, Selenium}; 6020_METALS_ICPMS: COMMON (Add-on) {Arsenic, Manganese, Nickel, Uranium}; 6010_METALS_ICP: COMMON {Antimony, Silver}; 7471_MERCURY_CV: COMMON (SOLIDS);
(4) 7196_CR6: COMMON; 350.1_AMMONIA: COMMON; 9010_CYANIDE: COMMON;
(5) GAMMA_GS: COMMON; AMCMISO_IE_PRECIP_AEA: COMMON; PUISO_PLATE_AEA: COMMON {Plutonium-238, Plutonium-239/240}; UISO_PLATE_AEA: COMMON {Uranium-233/234, Uranium-235, Uranium-238}; C14_LSC: COMMON; I129_SEP_LEPS_GS: COMMON; NI63_LSC: COMMON; NP237_IE_PRECIP_AEA: COMMON; SRTOT_SEP_PRECIP_GPC: COMMON {Total beta radiostrontium}; TC99_EIE_LSC: COMMON; TRITIUM_DIST_LSC: COMMON;

PRINTED ON 10/8/2015 **FSR ID = FSR7777** **TRVL NUM = TRVL-16-007** A-6003-618 (REV 2)

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST 384871		F15-011-429	PAGE 1 OF 1
COLLECTOR D. Wright	COMPANY CONTACT TODAK, D	TELEPHONE NO. 376-6427	PROJECT COORDINATOR TODAK, D	PRICE CODE 8C / DATA TURNAROUND
SAMPLING LOCATION C9489, I-003 FTB	PROJECT DESIGNATION 200-DV-1 Operable Unit Characterization of Waste Sites - Soil		SAF NO. F15-011	AIR QUALITY ☐ / 15 Days / 15 Days
ICE CHEST NO. 6605-428	FIELD LOGBOOK NO. HNF-N-645-2/91	ACTUAL SAMPLE DEPTH (N/A)	COA 302632	METHOD OF SHIPMENT FEDERAL EXPRESS / ORIGINAL
SHIPPED TO GEL Laboratories, LLC	OFFSITE PROPERTY NO. 6108		BILL OF LADING/AIR BILL NO. 7748 9971 6007	

MATRIX*
A=Air
DL=Drum Liquids
DS=Drum Solids
L=Liquid
O=Oil
S=Soil
SE=Sediment
T=Tissue
V=Vegetation
W=Water
WI=Wipe
X=Other

POSSIBLE SAMPLE HAZARDS/ REMARKS
*Contains Radioactive Material at concentrations that are not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1. NA D 10-13-15

SPECIAL HANDLING AND/OR STORAGE
~~RADIOACTIVE TIE TO: B33BY3~~ D 10-13-15

PRESERVATION	Cool <=6C
HOLDING TIME	28 Days/48 Hours
TYPE OF CONTAINER	G/P
NO. OF CONTAINER(S)	1
VOLUME	60mL
SAMPLE ANALYSIS	SEE ITEM (1) IN SPECIAL INSTRUCTIONS

SAMPLE NO.	MATRIX*	SAMPLE DATE	SAMPLE TIME	✓
B33BY6	SOIL	11-4-15	0800	✓

CHAIN OF POSSESSION	SIGN/ PRINT NAMES			
RELINQUISHED BY/REMOVED FROM: D. Wright	DATE/TIME: 11-4-15 1045	RECEIVED BY/STORED IN: L.D. Wall CHPRC	DATE/TIME: 11-4-15 1045	SPECIAL INSTRUCTIONS: TRVL-16-007 (1) 9056_ANIONS_IC: COMMON; 9056_ANIONS_IC: COMMON (Add-on) {Phosphorus in phosphate};
RELINQUISHED BY/REMOVED FROM: L.D. Wall CHPRC	DATE/TIME: NOV 04 2015 1400	RECEIVED BY/STORED IN: FEDEX	DATE/TIME:	
RELINQUISHED BY/REMOVED FROM: FedEx	DATE/TIME:	RECEIVED BY/STORED IN: Sarah Edwards	DATE/TIME: 11.5.15/0900	
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:	
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:	
RELINQUISHED BY/REMOVED FROM	DATE/TIME:	RECEIVED BY/STORED IN	DATE/TIME:	

LABORATORY SECTION	RECEIVED BY	TITLE	DATE/TIME
FINAL SAMPLE DISPOSITION	DISPOSAL METHOD	DISPOSED BY	DATE/TIME

PRINTED ON 10/8/2015 | FSR ID = FSR7777 | TRVL NUM = TRVL-16-007 | A-6003-618 (REV 2)

GEL Laboratories LLC

SAMPLE RECEIPT & REVIEW FORM

Client: CPCC	**SDG/AR/COC/Work Order:**
Received By: SC	**Date Received:** 11.5.15

Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		/	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): 0cpm
Classified Radioactive II or III by RSO?		/	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		/	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		/	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		/	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		/	

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2	Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	/			Preservation Method: Ice bags Blue ice Dry ice None Other (describe) *all temperatures are recorded in Celsius 1.3
2a	Daily check performed and passed on IR temperature gun?	/			Temperature Device Serial #: 201404537 Secondary Temperature Device Serial # (If Applicable):
3	Chain of custody documents included with shipment?	/			
4	Sample containers intact and sealed?	/			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5	Samples requiring chemical preservation at proper pH?		/		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6	Do Low Level Perchlorate samples have headspace as required?		/		Sample ID's and containers affected:
7	VOA vials contain acid preservation?		/		(If unknown, select No)
8	VOA vials free of headspace (defined as < 6mm bubble)?		/		Sample ID's and containers affected:
9	Are Encore containers present?			/	(If yes, immediately deliver to Volatiles laboratory)
10	Samples received within holding time?	/			ID's and tests affected:
11	Sample ID's on COC match ID's on bottles?	/			Sample ID's and containers affected:
12	Date & time on COC match date & time on bottles?	/			Sample ID's affected:
13	Number of containers received match number indicated on COC?	/			Sample ID's affected:
14	Are sample containers identifiable as GEL provided?			/	
15	COC form is properly signed in relinquished/received sections?	/			
16	Carrier and tracking number.				Circle Applicable: FedEx Air FedEx Ground UPS Field Services Courier Other 7748 9971 6007 (1) 7748 9971 6110 (1) 7749 0250 0388 (3)

Comments (Use Continuation Form if needed):

PM (or PMA) review: Initials CS Date 11/6/15 Page 1 of 1 GL-CHL-SR-001 Rev 2

Data Review Qualifier Definitions

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 (843) 556-8171

Report Date: 16-NOV-15

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
U	Programmed	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.	Y			Includes MDA, TPU, count uncert.
J	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated	Y	Organics		Organics only
P	Programmed	Aroclor target analyte with greater than 25% difference between column analyses.	Y	Organics		PCB only
C	Manual	Analyte has been confirmed by GC/MS analysis	Y	Organics	Pesticide	IF GC/MS confirmation was attempted but unsuccessful do not qualify with C
B	Programmed	The analyte was detected in both the associated QC blank and in the sample.	Y	Organics		
E	Manual	Concentration exceeds the calibration range of the instrument	Y	Organics		Qualifier Uploaded
A	Manual	The TIC is a suspected aldol-condensation product	Y	Organics	Semi-Volatile	Uploaded with TIC
X	Programmed	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			Replaces H Hold Date In RAD replaces UI. Same usage as standard X as well.
N	Programmed	Spike Sample recovery is outside control limits.	Y			
*	Programmed	Duplicate analysis not within control limits	Y	Inorganics		
>	Programmed	Result greater than quantifiable range or greater than upper limit of the analysis range	Y	General Chemistry		
Z	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
B	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Y	Inorganics	Metals	Replaces J Estimated Value
D	Programmed	Results are reported from a diluted aliquot of sample.	Y			Dilution
E	Programmed	Reported value is estimated due to interferences. See comment in narrative.	Y	Inorganics	Metals	GEL E
M	Manual	Duplicate precision not met.	Y	Inorganics	Metals	Replaces *
o	Programmed	Analyte failed to recover within LCS limits (0rganics only)	Y	Organics		
S	Manual	Reported value determined by the Method of Standard Additions (MSA)	Y	Inorganics		Not coded B/C Rarely preformed
T	Programmed	Spike and/or spike duplicate sample recovery is outside control limits.	Y	Organics		GC/MS only
W	Manual	Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.	Y	Inorganics		No GFAA in house.
B	Programmed	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample	Y	Radiological		
Y	Manual	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier	Y			
+	Manual	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995	Y	Inorganics		
B	Programmed	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).	Y	General Chemistry		Replaces J Estimated Value
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	Inorganics	Metals	Replaces B Blank Detection
C	Programmed	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.	Y	General Chemistry		Replaces B Blank Detection
<	Programmed	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide	Y	General Chemistry		for Reactive CN/S

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Report Date: 16-NOV-15

Project Specific Qualifier Definitions for GEL Client Code: CPRC

Code	Status	Qualifier Definition	CofA	Department	Fraction	Additional Comments
UX	Manual	Gamma Spectroscopy--Uncertain identification	Y	Radiological		

Laboratory Certifications

List of current GEL Certifications as of 16 November 2015

State	Certification
Alaska	UST−110
Arkansas	88−0651
CLIA	42D0904046
California	2940 Interim
Colorado	SC00012
Connecticut	PH−0169
Delaware	SC000122013−10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330−15−00283, P330−15−00253
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013−10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C−SC−01
Kansas NELAP	E−10332
Kentucky SDWA	90129
Kentucky Wastewater	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA150001
Maryland	270
Massachusetts	M−SC012
Michigan	9976
Mississippi	SC000122013−10
Nebraska	NE−OS−26−13
Nevada	SC000122016−1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68−00485
S.Carolina Radchem	10120002
South Carolina Chemistry	10120001
Tennessee	TN 02934
Texas NELAP	T104704235−15−10
Utah NELAP	SC000122015−19
Vermont	VT87156
Virginia NELAP	460202
Washington	C780
West Virginia	997404

Volatile Analysis

Case Narrative

GC/MS Volatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Procedure:	**Volatile Organic Compounds (VOC) by Gas Chromatograph/Mass Spectrometer**
Analytical Method:	SW846 5035/8260C
Prep Method:	SW846 5035
Analytical Batch Number:	1521179
Prep Batch Number:	1521178

Sample Analysis

The following client and quality control samples were analyzed to complete this SDG using the methods referenced in the Analysis Information section:

Sample ID	Client ID
384871001	B33BX1
384871002	B33BW4
1203427951	Method Blank (MB)
1203427952	Laboratory Control Sample (LCS)
1203427953	384871001(B33BX1) Post Spike (PS)
1203427954	384871001(B33BX1) Post Spike Duplicate (PSD)

NOTE: For volatile organic analyses the matrix spike designations may be indicated as "PS" or "PSD". The "PS" designation (post spike) indicates that the matrix was fortified prior to analysis but after applying any prep factors, such as a dilution. The laboratory considers the MS/MSD and PS/PSD designations interchangeable.

The data results reported met all SOP and method criteria, unless otherwise discussed below.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-038 REV# 21.

Calibration Information

A complete list of the initial calibration data files with the correct dates and times of analysis are shown in the Calibration History report located in the Standard Data section of the data package. The surrogate compounds were calibrated using a minimum five-point calibration curve. The surrogates were added by the auto sampler at a concentration of 50 ug/L or 20 ug/L for low level analyses. GEL Laboratories LLC will not have surrogate recoveries reported for Dibromofluoromethane. This is due to increased regulations for this analyte and an industry shortage.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification Requirements
The calibration verification standard requirements were not all met for samples 384871001 (B33BX1) and 384871002 (B33BW4). There were no positive results for any of the analytes that were outside the calibration criteria. The results are reported.

Quality Control (QC) Information

Blank (MB) Statement
The blank analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Surrogate recoveries, in samples (See Below) were outside the acceptance limits. Sample re-analysis confirmed matrix interference. The initial results are reported.

Sample	Analyte	Value
384871001 (B33BX1)	1,2-Dichloroethane-d4	146* (81%-124%)
	Toluene-d8	136* (81%-120%)
384871002 (B33BW4)	1,2-Dichloroethane-d4	146* (81%-124%)
	Toluene-d8	140* (81%-120%)

Laboratory Control Sample (LCS) Recovery
The LCS (See Below) recoveries were not all within the acceptance limits. There were no detected analytes in the samples. The results are reported.

Sample	Analyte	Value
1203427952 (LCS)	Carbon disulfide	131* (70%-130%)

QC Sample Designation
Sample 384871001 (B33BX1) was designated for spike analysis.

Matrix Spike/Matrix Spike Duplicate Recovery Statement
The matrix spike (MS) and matrix spike duplicate (MSD) recoveries were within the required acceptance limits.

Relative Percent Difference (RPD) Statement
The RPDs between the matrix spike pair met the acceptance limits.

Internal Standard (ISTD) Acceptance
The internal standard responses in all client and quality control samples met the required acceptance criteria.

Technical Information

Holding Time Specifications
All samples in this SDG met the specified holding time. GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection or sample receipt. Those holding times expressed in hours are calculated in the ALPHALIMS system. Those holding times expressed as days expire at midnight on the day of expiration.

Sample Preservation and Integrity
All samples met the sample preservation and integrity requirements.

Sample Dilutions/Methanol Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Samples 384871001 (B33BX1) and 384871002 (B33BW4) were re-analyzed due to unacceptable surrogate or internal standard recoveries in the initial analysis. The re-analysis confirmed. The initial results are reported.

Miscellaneous Information

Data Exception (DER) Documentation
A data exception report (DER) 1466436 was generated for samples 384871001 (B33BX1), 384871002 (B33BW4) and 1203427952 (LCS) in this SDG/batch.

Manual Integrations
Data files associated with the initial calibration, continuing calibration check, and samples did not require manual integrations.

TIC Comment
Tentatively identified compounds (TIC) were not required for this SDG.

Additional Comments
Additional comments were not required for this SDG.

System Configuration

The Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description	P & T Trap
VOA3.I	Agilent 6890/5973 GC/MS w/ OI 4560/Archon Autosampler	HP6890/HP5973	DB-624	J&W, 60m x 0.25mm x 1.4um	Trap 10

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Erin Haubert **Name: Erin Haubert**

Date: 18 NOV 2015 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

Report Date: November 17, 2015

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/03/2015 12:10**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871001**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**0**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BX1**	**Method:**	**SW846 5035/8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1521179**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/06/2015 11:43**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2015 12:10**	**Aliquot:**	**7.2 g**	**Final Volume:**	**5 mL**
Data File:	**110615V3\3H510.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	0.208	ug/kg	0.208	1.39
79-34-5	1,1,2,2-Tetrachloroethane	U	0.208	ug/kg	0.208	1.39
79-00-5	1,1,2-Trichloroethane	U	0.208	ug/kg	0.208	1.39
75-34-3	1,1-Dichloroethane	U	0.208	ug/kg	0.208	1.39
75-35-4	1,1-Dichloroethylene	U	0.208	ug/kg	0.208	1.39
107-06-2	1,2-Dichloroethane	U	0.208	ug/kg	0.208	1.39
540-59-0	1,2-Dichloroethylene (total)	U	0.208	ug/kg	0.208	2.78
78-87-5	1,2-Dichloropropane	U	0.208	ug/kg	0.208	1.39
78-93-3	2-Butanone	U	2.08	ug/kg	2.08	6.94
591-78-6	2-Hexanone	U	2.08	ug/kg	2.08	6.94
108-10-1	4-Methyl-2-pentanone	U	2.08	ug/kg	2.08	6.94
67-64-1	Acetone	U	2.08	ug/kg	2.08	6.94
71-43-2	Benzene	U	0.208	ug/kg	0.208	1.39
75-27-4	Bromodichloromethane	U	0.208	ug/kg	0.208	1.39
75-25-2	Bromoform	U	0.208	ug/kg	0.208	1.39
74-83-9	Bromomethane	U	0.208	ug/kg	0.208	1.39
75-15-0	Carbon disulfide	U	1.11	ug/kg	1.11	6.94
56-23-5	Carbon tetrachloride	U	0.208	ug/kg	0.208	1.39
108-90-7	Chlorobenzene	U	0.208	ug/kg	0.208	1.39
75-00-3	Chloroethane	U	0.208	ug/kg	0.208	1.39
67-66-3	Chloroform	U	0.208	ug/kg	0.208	1.39
74-87-3	Chloromethane	U	0.208	ug/kg	0.208	1.39
124-48-1	Dibromochloromethane	U	0.208	ug/kg	0.208	1.39
100-41-4	Ethylbenzene	U	0.208	ug/kg	0.208	1.39
75-09-2	Methylene chloride	U	1.11	ug/kg	1.11	3.47
100-42-5	Styrene	U	0.208	ug/kg	0.208	1.39
127-18-4	Tetrachloroethylene	U	0.208	ug/kg	0.208	1.39
108-88-3	Toluene	U	0.208	ug/kg	0.208	1.39
79-01-6	Trichloroethylene	U	0.208	ug/kg	0.208	1.39
75-01-4	Vinyl chloride	U	0.208	ug/kg	0.208	1.39
1330-20-7	Xylenes (total)	U	0.208	ug/kg	0.208	4.17
10061-01-5	cis-1,3-Dichloropropylene	U	0.208	ug/kg	0.208	1.39
10061-02-6	trans-1,3-Dichloropropylene	U	0.208	ug/kg	0.208	1.39

GEL Laboratories LLC

Report Date: November 17, 2015

Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/03/2015 12:10**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871002**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**5.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BW4**	**Method:**	**SW846 5035/8260C**	**SOP Ref:**	**GL-OA-E-038**
Batch ID:	**1521179**	**Inst:**	**VOA3.I**	**Dilution:**	**1**
Run Date:	**11/06/2015 11:12**	**Analyst:**	**CDS1**	**Purge Vol:**	**5 mL**
Prep Date:	**11/03/2015 12:10**	**Aliquot:**	**6.7 g**	**Final Volume:**	**5 mL**
Data File:	**110615V3\3H509.D**	**Column:**	**DB-624**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
71-55-6	1,1,1-Trichloroethane	U	0.237	ug/kg	0.237	1.58
79-34-5	1,1,2,2-Tetrachloroethane	U	0.237	ug/kg	0.237	1.58
79-00-5	1,1,2-Trichloroethane	U	0.237	ug/kg	0.237	1.58
75-34-3	1,1-Dichloroethane	U	0.237	ug/kg	0.237	1.58
75-35-4	1,1-Dichloroethylene	U	0.237	ug/kg	0.237	1.58
107-06-2	1,2-Dichloroethane	U	0.237	ug/kg	0.237	1.58
540-59-0	1,2-Dichloroethylene (total)	U	0.237	ug/kg	0.237	3.16
78-87-5	1,2-Dichloropropane	U	0.237	ug/kg	0.237	1.58
78-93-3	2-Butanone	U	2.37	ug/kg	2.37	7.90
591-78-6	2-Hexanone	U	2.37	ug/kg	2.37	7.90
108-10-1	4-Methyl-2-pentanone	U	2.37	ug/kg	2.37	7.90
67-64-1	Acetone	U	2.37	ug/kg	2.37	7.90
71-43-2	Benzene	U	0.237	ug/kg	0.237	1.58
75-27-4	Bromodichloromethane	U	0.237	ug/kg	0.237	1.58
75-25-2	Bromoform	U	0.237	ug/kg	0.237	1.58
74-83-9	Bromomethane	U	0.237	ug/kg	0.237	1.58
75-15-0	Carbon disulfide	U	1.26	ug/kg	1.26	7.90
56-23-5	Carbon tetrachloride	U	0.237	ug/kg	0.237	1.58
108-90-7	Chlorobenzene	U	0.237	ug/kg	0.237	1.58
75-00-3	Chloroethane	U	0.237	ug/kg	0.237	1.58
67-66-3	Chloroform	U	0.237	ug/kg	0.237	1.58
74-87-3	Chloromethane	U	0.237	ug/kg	0.237	1.58
124-48-1	Dibromochloromethane	U	0.237	ug/kg	0.237	1.58
100-41-4	Ethylbenzene	U	0.237	ug/kg	0.237	1.58
75-09-2	Methylene chloride	U	1.26	ug/kg	1.26	3.95
100-42-5	Styrene	U	0.237	ug/kg	0.237	1.58
127-18-4	Tetrachloroethylene	U	0.237	ug/kg	0.237	1.58
108-88-3	Toluene	J	0.679	ug/kg	0.237	1.58
79-01-6	Trichloroethylene	U	0.237	ug/kg	0.237	1.58
75-01-4	Vinyl chloride	U	0.237	ug/kg	0.237	1.58
1330-20-7	Xylenes (total)	J	0.284	ug/kg	0.237	4.74
10061-01-5	cis-1,3-Dichloropropylene	U	0.237	ug/kg	0.237	1.58
10061-02-6	trans-1,3-Dichloropropylene	U	0.237	ug/kg	0.237	1.58

Quality Control Summary

GEL LABORATORIES LLC
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QC Summary

Report Date: November 17, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1521179										
QC1203427952 LCS										
1,1,1-Trichloroethane	50.0			61.2	ug/kg		122	(70%-130%)	CDS1	11/06/15 08:41
1,1,2,2-Tetrachloroethane	50.0			55.4	ug/kg		111	(70%-130%)		
1,1,2-Trichloroethane	50.0			49.5	ug/kg		99	(70%-130%)		
1,1-Dichloroethane	50.0			55.9	ug/kg		112	(70%-130%)		
1,1-Dichloroethylene	50.0			61.7	ug/kg		123	(70%-130%)		
1,2-Dichloroethane	50.0			47.7	ug/kg		95	(70%-130%)		
1,2-Dichloroethylene (total)	100			109	ug/kg		109	(70%-130%)		
1,2-Dichloropropane	50.0			50.6	ug/kg		101	(70%-130%)		
2-Butanone	250			251	ug/kg		100	(70%-130%)		
2-Hexanone	250			255	ug/kg		102	(70%-130%)		
4-Methyl-2-pentanone	250			242	ug/kg		97	(70%-130%)		
Acetone	250			245	ug/kg		98	(70%-130%)		
Benzene	50.0			54.7	ug/kg		109	(70%-130%)		
Bromodichloromethane	50.0			52.5	ug/kg		105	(70%-130%)		
Bromoform	50.0			51.9	ug/kg		104	(70%-130%)		
Bromomethane	50.0			60.1	ug/kg		120	(70%-130%)		
Carbon disulfide	250			327	ug/kg		131 *	(70%-130%)		
Carbon tetrachloride	50.0			58.6	ug/kg		117	(70%-130%)		
Chlorobenzene	50.0			54.6	ug/kg		109	(70%-130%)		
Chloroethane	50.0			54.2	ug/kg		108	(70%-130%)		

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1521179										
Chloroform	50.0			52.7	ug/kg		105	(70%-130%)	CDS1	11/06/15 08:41
Chloromethane	50.0			51.9	ug/kg		104	(70%-130%)		
Dibromochloromethane	50.0			54.9	ug/kg		110	(70%-130%)		
Ethylbenzene	50.0			55.4	ug/kg		111	(70%-130%)		
Methylene chloride	50.0			52.3	ug/kg		105	(70%-130%)		
Styrene	50.0			54.3	ug/kg		109	(70%-130%)		
Tetrachloroethylene	50.0			56.7	ug/kg		113	(70%-130%)		
Toluene	50.0			55.6	ug/kg		111	(70%-130%)		
Trichloroethylene	50.0			55.9	ug/kg		112	(70%-130%)		
Vinyl chloride	50.0			51.0	ug/kg		102	(70%-130%)		
Xylenes (total)	150			165	ug/kg		110	(70%-130%)		
cis-1,3-Dichloropropylene	50.0			52.6	ug/kg		105	(70%-130%)		
trans-1,3-Dichloropropylene	50.0			53.0	ug/kg		106	(70%-130%)		
**1,2-Dichloroethane-d4	50.0			52.7	ug/L		105	(81%-124%)		
**Bromofluorobenzene	50.0			50.7	ug/L		101	(70%-130%)		
**Toluene-d8	50.0			50.4	ug/L		101	(81%-120%)		
QC1203427951 MB										
1,1,1-Trichloroethane			U	0.300	ug/kg					11/06/15 10:42
1,1,2,2-Tetrachloroethane			U	0.300	ug/kg					
1,1,2-Trichloroethane			U	0.300	ug/kg					
1,1-Dichloroethane			U	0.300	ug/kg					
1,1-Dichloroethylene			U	0.300	ug/kg					

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS										
Batch 1521179										
1,2-Dichloroethane			U	0.300	ug/kg				CDS1	11/06/15 10:42
1,2-Dichloroethylene (total)			U	0.300	ug/kg					
1,2-Dichloropropane			U	0.300	ug/kg					
2-Butanone			U	3.00	ug/kg					
2-Hexanone			U	3.00	ug/kg					
4-Methyl-2-pentanone			U	3.00	ug/kg					
Acetone			U	3.00	ug/kg					
Benzene			U	0.300	ug/kg					
Bromodichloromethane			U	0.300	ug/kg					
Bromoform			U	0.300	ug/kg					
Bromomethane			U	0.300	ug/kg					
Carbon disulfide			U	1.60	ug/kg					
Carbon tetrachloride			U	0.300	ug/kg					
Chlorobenzene			U	0.300	ug/kg					
Chloroethane			U	0.300	ug/kg					
Chloroform			U	0.300	ug/kg					
Chloromethane			U	0.300	ug/kg					
Dibromochloromethane			U	0.300	ug/kg					
Ethylbenzene			U	0.300	ug/kg					
Methylene chloride			U	1.60	ug/kg					
Styrene			U	0.300	ug/kg					

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1521179											
Tetrachloroethylene				U	0.300	ug/kg					
Toluene				U	0.300	ug/kg				CDS1	11/06/15 10:42
Trichloroethylene				U	0.300	ug/kg					
Vinyl chloride				U	0.300	ug/kg					
Xylenes (total)				U	0.300	ug/kg					
cis-1,3-Dichloropropylene				U	0.300	ug/kg					
trans-1,3-Dichloropropylene				U	0.300	ug/kg					
**1,2-Dichloroethane-d4	50.0				55.5	ug/L		111	(81%-124%)		
**Bromofluorobenzene	50.0				46.1	ug/L		92	(70%-130%)		
**Toluene-d8	50.0				54.3	ug/L		109	(81%-120%)		
QC1203427953 384871001 PS											
1,1,1-Trichloroethane	50.0	U	0.00		49.3	ug/L		99	(70%-130%)		11/06/15 16:17
1,1,2,2-Tetrachloroethane	50.0	U	0.00		57.1	ug/L		114	(70%-130%)		
1,1,2-Trichloroethane	50.0	U	0.00		48.3	ug/L		97	(70%-130%)		
1,1-Dichloroethane	50.0	U	0.00		49.1	ug/L		98	(70%-130%)		
1,1-Dichloroethylene	50.0	U	0.00		49.7	ug/L		99	(70%-130%)		
1,2-Dichloroethane	50.0	U	0.00		47.8	ug/L		96	(70%-130%)		
1,2-Dichloroethylene (total)	100	U	0.00		91.7	ug/L		92	(70%-130%)		
1,2-Dichloropropane	50.0	U	0.00		46.6	ug/L		93	(70%-130%)		
2-Butanone	250	U	0.00		283	ug/L		113	(70%-130%)		
2-Hexanone	250	U	0.00		277	ug/L		111	(70%-130%)		
4-Methyl-2-pentanone	250	U	0.00		284	ug/L		113	(70%-130%)		
Acetone	250	U	0.00		277	ug/L		111	(70%-130%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1521179											
Benzene	50.0	U	0.00		46.8	ug/L		94	(70%-130%)	CDS1	11/06/15 16:17
Bromodichloromethane	50.0	U	0.00		47.3	ug/L		95	(70%-130%)		
Bromoform	50.0	U	0.00		48.9	ug/L		98	(70%-130%)		
Bromomethane	50.0	U	0.00		50.8	ug/L		102	(70%-130%)		
Carbon disulfide	250	U	0.00		264	ug/L		106	(70%-130%)		
Carbon tetrachloride	50.0	U	0.00		47.6	ug/L		95	(70%-130%)		
Chlorobenzene	50.0	U	0.00		39.1	ug/L		78	(70%-130%)		
Chloroethane	50.0	U	0.00		46.9	ug/L		94	(70%-130%)		
Chloroform	50.0	U	0.00		46.2	ug/L		92	(70%-130%)		
Chloromethane	50.0	U	0.00		46.2	ug/L		92	(70%-130%)		
Dibromochloromethane	50.0	U	0.00		49.9	ug/L		100	(70%-130%)		
Ethylbenzene	50.0	U	0.00		38.4	ug/L		77	(70%-130%)		
Methylene chloride	50.0	U	0.00		48.8	ug/L		98	(70%-130%)		
Styrene	50.0	U	0.00		37.8	ug/L		76	(70%-130%)		
Tetrachloroethylene	50.0	U	0.00		38.8	ug/L		78	(70%-130%)		
Toluene	50.0	U	0.00		42.7	ug/L		85	(70%-130%)		
Trichloroethylene	50.0	U	0.00		43.1	ug/L		86	(70%-130%)		
Vinyl chloride	50.0	U	0.00		44.4	ug/L		89	(70%-130%)		
Xylenes (total)	150	U	0.00		114	ug/L		76	(70%-130%)		
cis-1,3-Dichloropropylene	50.0	U	0.00		43.9	ug/L		88	(70%-130%)		
trans-1,3-Dichloropropylene	50.0	U	0.00		47.4	ug/L		95	(70%-130%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1521179											
**1,2-Dichloroethane-d4	50.0		73.1		54.7	ug/L		109	(81%-124%)		
**Bromofluorobenzene	50.0		60.7		49.6	ug/L		99	(70%-130%)	CDS1	11/06/15 16:17
**Toluene-d8	50.0		68.1		51.5	ug/L		103	(81%-120%)		
QC1203427954 384871001 PSD											
1,1,1-Trichloroethane	50.0	U	0.00		47.0	ug/L	5	94	(0%-20%)		11/06/15 16:47
1,1,2,2-Tetrachloroethane	50.0	U	0.00		50.3	ug/L	13	101	(0%-20%)		
1,1,2-Trichloroethane	50.0	U	0.00		44.1	ug/L	9	88	(0%-20%)		
1,1-Dichloroethane	50.0	U	0.00		45.6	ug/L	7	91	(0%-20%)		
1,1-Dichloroethylene	50.0	U	0.00		46.7	ug/L	6	93	(0%-20%)		
1,2-Dichloroethane	50.0	U	0.00		43.7	ug/L	9	87	(0%-20%)		
1,2-Dichloroethylene (total)	100	U	0.00		85.5	ug/L	7	86	(0%-20%)		
1,2-Dichloropropane	50.0	U	0.00		43.1	ug/L	8	86	(0%-20%)		
2-Butanone	250	U	0.00		245	ug/L	15	98	(0%-20%)		
2-Hexanone	250	U	0.00		243	ug/L	13	97	(0%-20%)		
4-Methyl-2-pentanone	250	U	0.00		250	ug/L	13	100	(0%-20%)		
Acetone	250	U	0.00		230	ug/L	19	92	(0%-20%)		
Benzene	50.0	U	0.00		43.1	ug/L	8	86	(0%-20%)		
Bromodichloromethane	50.0	U	0.00		43.1	ug/L	9	86	(0%-20%)		
Bromoform	50.0	U	0.00		43.0	ug/L	13	86	(0%-20%)		
Bromomethane	50.0	U	0.00		49.8	ug/L	2	100	(0%-20%)		
Carbon disulfide	250	U	0.00		248	ug/L	6	99	(0%-20%)		
Carbon tetrachloride	50.0	U	0.00		43.7	ug/L	9	87	(0%-20%)		
Chlorobenzene	50.0	U	0.00		36.7	ug/L	6	73	(0%-20%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Volatile-GC/MS											
Batch 1521179											
Chloroethane	50.0	U	0.00		46.1	ug/L	2	92	(0%-20%)	CDS1	11/06/15 16:47
Chloroform	50.0	U	0.00		43.3	ug/L	6	87	(0%-20%)		
Chloromethane	50.0	U	0.00		46.1	ug/L	0	92	(0%-20%)		
Dibromochloromethane	50.0	U	0.00		45.4	ug/L	9	91	(0%-20%)		
Ethylbenzene	50.0	U	0.00		35.5	ug/L	8	71	(0%-20%)		
Methylene chloride	50.0	U	0.00		45.9	ug/L	6	92	(0%-20%)		
Styrene	50.0	U	0.00		35.7	ug/L	6	71	(0%-20%)		
Tetrachloroethylene	50.0	U	0.00		36.1	ug/L	7	72	(0%-20%)		
Toluene	50.0	U	0.00		39.5	ug/L	8	79	(0%-20%)		
Trichloroethylene	50.0	U	0.00		39.7	ug/L	8	79	(0%-20%)		
Vinyl chloride	50.0	U	0.00		45.4	ug/L	2	91	(0%-20%)		
Xylenes (total)	150	U	0.00		106	ug/L	7	71	(0%-20%)		
cis-1,3-Dichloropropylene	50.0	U	0.00		40.4	ug/L	8	81	(0%-20%)		
trans-1,3-Dichloropropylene	50.0	U	0.00		42.8	ug/L	10	86	(0%-20%)		
**1,2-Dichloroethane-d4	50.0		73.1		54.9	ug/L		110	(81%-124%)		
**Bromofluorobenzene	50.0		60.7		51.0	ug/L		102	(70%-130%)		
**Toluene-d8	50.0		68.1		51.0	ug/L		102	(81%-120%)		

Notes:

The Qualifiers in this report are defined as follows:

A The TIC is a suspected aldol-condensation product

B The analyte was detected in both the associated QC blank and in the sample.

C Analyte has been confirmed by GC/MS analysis

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QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

D Results are reported from a diluted aliquot of sample.

E Concentration exceeds the calibration range of the instrument

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

N Spike Sample recovery is outside control limits.

P Aroclor target analyte with greater than 25% difference between column analyses.

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GEL Laboratories LLC

Report Date: November 17 2015

Volatile

Surrogate Recovery Report

SDG Number: GEL384871

Matrix Type: SOLID

Sample ID	Client ID	DCED4 %REC	TOL %REC	BFB %REC
1203427952	LCS for batch 1521178	105	101	101
1203427951	MB for batch 1521178	111	109	92
384871002	B33BW4	146 *	140 *	128
384871001	B33BX1	146 *	136 *	121
1203427953	B33BX1PS	109	103	99
1203427954	B33BX1PSD	110	102	102

Surrogate		Acceptance Limits
DCED4	= 1,2-Dichloroethane-d4	(81%-124%)
TOL	= Toluene-d8	(81%-120%)
BFB	= Bromofluorobenzene	(70%-130%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1466436
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
13-NOV-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
VOA GC/MS	SW846 5035/8260C	Solid	CPRC
Batch ID:	**Sample Numbers:**		
1521179	See Below		

Potentially affected work order(s)(SDG): 384871(GEL384871),385002(GEL385002)

Application Issues:

Other

Failed Recovery for LCS/LCSD

Failed Yield for Surrogates

Specification and Requirements Exception Description:	DER Disposition:
1. Failed Recovery for LCS/LCSD: QC 1203427952LCS 2. Failed Yield for Surrogates: 384871 001,002 385002 001 3. The percent drift for Bromomethane was outside of the accetpance limits in the calibration verification sample with high bias. The compound was not detected in the associated samples. The associated samples are GEL384871.	1. The LCS (See Below) recoveries were not all within the acceptance limits. There were no detected analytes in the samples. The results are reported. 1203427952 (LCS) Carbon disulfide [131* (70%-130%)]. 2. Surrogate recoveries, in samples (See Below) were outside the acceptance limits. Sample re-analysis confirmed matrix interference. The initial results are reported. 384871001 (B33BX1) 1,2-Dichloroethane-d4 [146* (81%-124%)], Toluene-d8 [136* (81%-120%)]. 384871002 (B33BW4) 1,2-Dichloroethane-d4 [146* (81%-124%)] and Toluene-d8 [140* (81%-120%)]. Surrogate recoveries, in sample (See Below) was outside the acceptance limits. Sample re-analysis confirmed matrix interference. The re-analysis results are reported. 385002001 (B33BY0) 1,2-Dichloroethane-d4 [147* (81%-124%)] and Toluene-d8 [136* (81%-120%)]. 3. The data is reported.

Originator's Name:
Crystal Stacey 13-NOV-15

Data Validator/Group Leader:
Patricia Steele 17-NOV-15

Semi-Volatile Analysis

Case Narrative

GC/MS Semivolatile
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	8270_SVOA_GCMS
Prep Method:	SW846 3541
Analytical Batch Number:	1520972
Prep Batch Number:	1520922

Sample Analysis

The following samples were analyzed using the analytical protocol as established in 8270_SVOA_GCMS:

Sample ID	Client ID
384871003	B33BY1
1203427400	Method Blank (MB)
1203427401	Laboratory Control Sample (LCS)

Sample 384871 003 in this SDG was analyzed on a "dry weight corrected" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 35.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at

GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

CCV Requirements
All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8270D for sample 384871003 (B33BY1) and the associated QC. However, the method allows for a designated number of outliers dependent on the requested analyte list. This SDG satisfied the 8270D outlier acceptance criteria. If required, a CRDL was analyzed after the CCVs to demonstrate that there is adequate sensitivity to detect the failed compounds at the applicable lower quantitation limit.

Quality Control (QC) Information

Method Blank (MB) Statement
Method blank 1203427400 (MB) displayed a target analyte hit above the reporting limit. All client samples that also displayed a hit for this target analyte were re-extracted. Any samples that did not display a hit for this analyte or did not request analysis for this analyte were reported.

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

QC Sample Designation
A matrix spike/matrix spike duplicate pair was not reported with this batch due to the parent sample being re-extracted within holding.

Internal Standard (ISTD) Acceptance
The internal standard responses used to quantitate the requested target analytes were within the required acceptance criteria for the SDG associated samples in this batch.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

Sample Dilutions
The LCS(1203427401) for sample 384871003 (B33BY1) was analyzed at a dilution due to Isophorone exceeding the calibration range.

Sample Re-extraction/Re-analysis
Sample 384871004 (B33BY5) was re-extracted due to contamination present in the method blank and sample analyses. Data for the sample was reported from the re-extraction.

Miscellaneous Information:

Data Exception (DER) Documentation
A data exception report (DER) 1464433 was generated for samples 1203427400 (MB) and 1203427401 (LCS) in this SDG/batch.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) were not required for the samples in this SDG for this batch.

Additional Comments
Additional comments were not required for the SDG associated samples in this batch.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
MSD4.I	Agilent 7890A/5975C GC/MS w/ 7683 Autosampler	HP6890/HP5973	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

Method/Analysis Information

Procedure:	**Analysis of Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry**
Analytical Method:	8270_SVOA_GCMS
Prep Method:	SW846 3541
Analytical Batch Number:	1521644

Prep Batch Number: 1521640

Sample Analysis

The following samples were analyzed using the analytical protocol as established in 8270_SVOA_GCMS:

Sample ID	Client ID
384871004	B33BY5
1203429164	Method Blank (MB)
1203429165	Laboratory Control Sample (LCS)
1203429168	384871004(B33BY5) Matrix Spike (MS)
1203429169	384871004(B33BY5) Matrix Spike Duplicate (MSD)

Sample 384871 004 in this SDG was analyzed on a "dry weight corrected" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-009 REV# 35.

Raw data reports are processed and reviewed by the analyst using the data analysis software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package. The various calibration mixes may not be calibrated using all of the calibration levels. In addition, not all of the mixes are calibrated using the same levels.

Diphenylamine has now superseded N-Nitroso-diphenylamine on Quantitation Reports, Initial Calibration Reports, Calibration Check Standard Reports, etc. Previous versions of EPA Methodologies referenced N-Nitroso-diphenylamine. However, as stated in EPA Methodology, "N-Nitroso-diphenylamine decomposes in the gas chromatographic inlet and cannot be separated from Diphenylamine." Studies of these two compounds at GEL, both independent of each other and together, showed that they not only co-elute, but also have similar mass spectra. N-Nitroso-diphenylamine and Diphenylamine will be reported as Diphenylamine on all reports and forms.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG) in this batch. A second source initial calibration verification (ICV) was included in the standard section directly behind the initial calibration.

CCV Requirements
All Calibration Verification Standards (CCV) did not meet the acceptance criteria as outlined in Method 8270D for samples and the associated QC. However, the method allows for a designated number of outliers dependent on the requested analyte list. This SDG satisfied the 8270D outlier acceptance criteria. If required, a CRDL was analyzed after the CCVs to demonstrate that there is adequate sensitivity to detect the failed compounds at the applicable lower quantitation limit.

Quality Control (QC) Information

Method Blank (MB) Statement
Method blank (See Below) displayed a target analyte hit above the reporting limit. All client samples that also displayed a hit for this target analyte were re-extracted. Any samples that did not display a hit for this analyte or did not request analysis for this analyte were reported.

Sample	Analyte	Value
1203429164 (MB)	Isophorone	

Surrogate Recoveries
All the surrogate recoveries were within the established acceptance criteria for this SDG in this batch.

Laboratory Control Sample (LCS) Recovery
The LCS and/or LCSD (See Below) did not meet spike recovery acceptance criteria. Since the target analytes were not detected in the associated samples above the reporting limits, the positive bias had no adverse impact on the data.

Sample	Analyte	Value
1203429165 (LCS)	Butylbenzylphthalate	139* (42%-120%)
	Di-n-butylphthalate	122* (47%-115%)
	Isophorone	122* (42%-107%)
	Pyrene	116* (38%-111%)

QC Sample Designation
Sample 384871004 (B33BY5) was selected for analysis as the matrix spike and matrix spike duplicate.

Spike Recovery Statement
The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. Because the recoveries were biased high and the target analytes were not detected in the associated samples above the reporting limit, the data were reported.

Sample	Analyte	Value
1203429168 (B33BY5MS)	Isophorone	173* (29%-107%)

MS/MSD Relative Percent Difference (RPD) Statement
The relative percent difference (RPD) between the MS and MSD (See Below) did not meet acceptance limits. As the individual MS and MSD recoveries were within the acceptance limits, the failures had no adverse impact on the reported sample data.

Sample	Analyte	Value
1203429168MS and 1203429169MSD (B33BY5)	Isophorone	63* (0%-30%)

Internal Standard (ISTD) Acceptance
The internal standard responses used to quantitate the requested target analytes were within the required acceptance criteria for the SDG associated samples in this batch.

Technical Information:

Holding Time Specifications
All samples in this SDG in this batch met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. All reported compound mass spectra met the detection specifications in the method.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this analytical batch unless confirmations or dilutions were required.

Miscellaneous Information:

Data Exception (DER) Documentation
A data exception report (DER) 1465485 was generated for samples 1203429164 (MB), 1203429165 (LCS), 1203429168 (B33BY5MS) and 1203429169 (B33BY5MSD) in this SDG/batch.

Manual Integrations
Some initial calibration standards, continuing calibration standards, and/or samples may require manual integrations due to software limitations. Manual integrations, if any, are included with the raw data.

TIC Comment
Tentatively identified compounds (TIC) were not required for the samples in this SDG for this batch.

Additional Comments
Additional comments were not required for the SDG associated samples in this batch.

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative of each electronic package will indicate the reviewer name associated with the generation of the data and package. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

System Configuration

The Semi-Volatile-GC/MS analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description

MSD4.I	Agilent 7890A/5975C GC/MS w/ 7683 Autosampler	HP6890/HP5973	DB-5MS	25m x 0.2mm, 0.33um (5% Phenylmethylpolysiloxane)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

B The analyte was detected in both the associated QC blank and in the sample.
D Results are reported from a diluted aliquot of sample.
E Concentration exceeds the calibration range of the instrument
J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
T Spike and/or spike duplicate sample recovery is outside control limits.
U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Barbara Bailey **Name: Barbara Bailey**

Date: 16 NOV 2015 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

Report Date: November 16, 2015

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871003**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**2.6**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY1**	**Method:**	**8270_SVOA_GCMS**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1520972**	**Inst:**	**MSD4.I**	**Dilution:**	**1**
Run Date:	**11/06/2015 21:08**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/06/2015 11:05**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**s110615.B\s4k0622.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
120-82-1	1,2,4-Trichlorobenzene	U	103	ug/kg	103	342
95-50-1	1,2-Dichlorobenzene	U	103	ug/kg	103	342
541-73-1	1,3-Dichlorobenzene	U	103	ug/kg	103	342
106-46-7	1,4-Dichlorobenzene	U	103	ug/kg	103	342
95-95-4	2,4,5-Trichlorophenol	U	103	ug/kg	103	342
120-83-2	2,4-Dichlorophenol	U	103	ug/kg	103	342
105-67-9	2,4-Dimethylphenol	U	103	ug/kg	103	342
51-28-5	2,4-Dinitrophenol	U	103	ug/kg	103	684
121-14-2	2,4-Dinitrotoluene	U	103	ug/kg	103	342
606-20-2	2,6-Dinitrotoluene	U	103	ug/kg	103	342
91-58-7	2-Chloronaphthalene	U	10.3	ug/kg	10.3	34.2
95-57-8	2-Chlorophenol	U	103	ug/kg	103	342
534-52-1	2-Methyl-4,6-dinitrophenol	U	103	ug/kg	103	342
91-57-6	2-Methylnaphthalene	U	10.3	ug/kg	10.3	34.2
88-75-5	2-Nitrophenol	U	103	ug/kg	103	342
91-94-1	3,3'-Dichlorobenzidine	U	103	ug/kg	103	342
101-55-3	4-Bromophenylphenylether	U	103	ug/kg	103	342
59-50-7	4-Chloro-3-methylphenol	U	137	ug/kg	137	342
106-47-8	4-Chloroaniline	U	103	ug/kg	103	342
7005-72-3	4-Chlorophenylphenylether	U	103	ug/kg	103	342
100-02-7	4-Nitrophenol	U	103	ug/kg	103	342
83-32-9	Acenaphthene	U	10.3	ug/kg	10.3	34.2
208-96-8	Acenaphthylene	U	10.3	ug/kg	10.3	34.2
120-12-7	Anthracene	U	10.3	ug/kg	10.3	34.2
56-55-3	Benzo(a)anthracene	U	10.3	ug/kg	10.3	34.2
50-32-8	Benzo(a)pyrene	U	10.3	ug/kg	10.3	34.2
205-99-2	Benzo(b)fluoranthene	U	10.3	ug/kg	10.3	34.2
191-24-2	Benzo(ghi)perylene	U	10.3	ug/kg	10.3	34.2
207-08-9	Benzo(k)fluoranthene	U	10.3	ug/kg	10.3	34.2
85-68-7	Butylbenzylphthalate	U	103	ug/kg	103	342
86-74-8	Carbazole	U	10.3	ug/kg	10.3	34.2
218-01-9	Chrysene	U	10.3	ug/kg	10.3	34.2
84-74-2	Di-n-butylphthalate	U	103	ug/kg	103	342
117-84-0	Di-n-octylphthalate	U	103	ug/kg	103	342
53-70-3	Dibenzo(a,h)anthracene	U	10.3	ug/kg	10.3	34.2
132-64-9	Dibenzofuran	U	103	ug/kg	103	342
84-66-2	Diethylphthalate	U	103	ug/kg	103	342
131-11-3	Dimethylphthalate	U	103	ug/kg	103	342

GEL Laboratories LLC

Report Date: November 16, 2015

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871003**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**2.6**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY1**	**Method:**	**8270_SVOA_GCMS**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1520972**	**Inst:**	**MSD4.I**	**Dilution:**	**1**
Run Date:	**11/06/2015 21:08**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/06/2015 11:05**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**s110615.B\s4k0622.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
206-44-0	Fluoranthene	U	10.3	ug/kg	10.3	34.2
86-73-7	Fluorene	U	10.3	ug/kg	10.3	34.2
118-74-1	Hexachlorobenzene	U	103	ug/kg	103	342
87-68-3	Hexachlorobutadiene	U	103	ug/kg	103	342
77-47-4	Hexachlorocyclopentadiene	U	103	ug/kg	103	342
67-72-1	Hexachloroethane	U	103	ug/kg	103	342
193-39-5	Indeno(1,2,3-cd)pyrene	U	10.3	ug/kg	10.3	34.2
78-59-1	Isophorone	TU	103	ug/kg	103	342
621-64-7	N-Nitrosodipropylamine	U	103	ug/kg	103	342
91-20-3	Naphthalene	U	10.3	ug/kg	10.3	34.2
98-95-3	Nitrobenzene	U	103	ug/kg	103	342
87-86-5	Pentachlorophenol	U	103	ug/kg	103	342
85-01-8	Phenanthrene	U	10.3	ug/kg	10.3	34.2
108-95-2	Phenol	U	103	ug/kg	103	342
129-00-0	Pyrene	U	10.3	ug/kg	10.3	34.2
126-73-8	Tributylphosphate	U	103	ug/kg	103	342
108-60-1	bis(2-Chloro-1-methylethyl)ether	U	103	ug/kg	103	342
111-91-1	bis(2-Chloroethoxy)methane	U	103	ug/kg	103	342
111-44-4	bis(2-Chloroethyl) ether	U	103	ug/kg	103	342
117-81-7	bis(2-Ethylhexyl)phthalate	U	103	ug/kg	103	342
99-09-2	m-Nitroaniline	U	103	ug/kg	103	342
95-48-7	o-Cresol	U	103	ug/kg	103	342
88-74-4	o-Nitroaniline	U	113	ug/kg	113	342
100-01-6	p-Nitroaniline	U	103	ug/kg	103	342

GEL Laboratories LLC

Report Date: November 16, 2015

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871004**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY5**	**Method:**	**8270_SVOA_GCMS**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1521644**	**Inst:**	**MSD4.I**	**Dilution:**	**1**
Run Date:	**11/10/2015 20:27**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/10/2015 12:46**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**s111015.B\s4k1017.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
120-82-1	1,2,4-Trichlorobenzene	U	100	ug/kg	100	335
95-50-1	1,2-Dichlorobenzene	U	100	ug/kg	100	335
541-73-1	1,3-Dichlorobenzene	U	100	ug/kg	100	335
106-46-7	1,4-Dichlorobenzene	U	100	ug/kg	100	335
95-95-4	2,4,5-Trichlorophenol	U	100	ug/kg	100	335
120-83-2	2,4-Dichlorophenol	U	100	ug/kg	100	335
105-67-9	2,4-Dimethylphenol	U	100	ug/kg	100	335
51-28-5	2,4-Dinitrophenol	U	100	ug/kg	100	670
121-14-2	2,4-Dinitrotoluene	U	100	ug/kg	100	335
606-20-2	2,6-Dinitrotoluene	U	100	ug/kg	100	335
91-58-7	2-Chloronaphthalene	U	10.0	ug/kg	10.0	33.5
95-57-8	2-Chlorophenol	U	100	ug/kg	100	335
534-52-1	2-Methyl-4,6-dinitrophenol	U	100	ug/kg	100	335
91-57-6	2-Methylnaphthalene	U	10.0	ug/kg	10.0	33.5
88-75-5	2-Nitrophenol	U	100	ug/kg	100	335
91-94-1	3,3'-Dichlorobenzidine	U	100	ug/kg	100	335
101-55-3	4-Bromophenylphenylether	U	100	ug/kg	100	335
59-50-7	4-Chloro-3-methylphenol	U	134	ug/kg	134	335
106-47-8	4-Chloroaniline	U	100	ug/kg	100	335
7005-72-3	4-Chlorophenylphenylether	U	100	ug/kg	100	335
100-02-7	4-Nitrophenol	U	100	ug/kg	100	335
83-32-9	Acenaphthene	U	10.0	ug/kg	10.0	33.5
208-96-8	Acenaphthylene	U	10.0	ug/kg	10.0	33.5
120-12-7	Anthracene	U	10.0	ug/kg	10.0	33.5
56-55-3	Benzo(a)anthracene	U	10.0	ug/kg	10.0	33.5
50-32-8	Benzo(a)pyrene	U	10.0	ug/kg	10.0	33.5
205-99-2	Benzo(b)fluoranthene	U	10.0	ug/kg	10.0	33.5
191-24-2	Benzo(ghi)perylene	U	10.0	ug/kg	10.0	33.5
207-08-9	Benzo(k)fluoranthene	U	10.0	ug/kg	10.0	33.5
85-68-7	Butylbenzylphthalate	U	100	ug/kg	100	335
86-74-8	Carbazole	U	10.0	ug/kg	10.0	33.5
218-01-9	Chrysene	U	10.0	ug/kg	10.0	33.5
84-74-2	Di-n-butylphthalate	U	100	ug/kg	100	335
117-84-0	Di-n-octylphthalate	U	100	ug/kg	100	335
53-70-3	Dibenzo(a,h)anthracene	U	10.0	ug/kg	10.0	33.5
132-64-9	Dibenzofuran	U	100	ug/kg	100	335
84-66-2	Diethylphthalate	U	100	ug/kg	100	335
131-11-3	Dimethylphthalate	U	100	ug/kg	100	335

GEL Laboratories LLC

Report Date: November 16, 2015

Semi-Volatile
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871004**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY5**	**Method:**	**8270_SVOA_GCMS**	**SOP Ref:**	**GL-OA-E-009**
Batch ID:	**1521644**	**Inst:**	**MSD4.I**	**Dilution:**	**1**
Run Date:	**11/10/2015 20:27**	**Analyst:**	**JMB3**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/10/2015 12:46**	**Aliquot:**	**30.02 g**	**Final Volume:**	**1 mL**
Data File:	**s111015.B\s4k1017.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
206-44-0	Fluoranthene	U	10.0	ug/kg	10.0	33.5
86-73-7	Fluorene	U	10.0	ug/kg	10.0	33.5
118-74-1	Hexachlorobenzene	U	100	ug/kg	100	335
87-68-3	Hexachlorobutadiene	U	100	ug/kg	100	335
77-47-4	Hexachlorocyclopentadiene	U	100	ug/kg	100	335
67-72-1	Hexachloroethane	U	100	ug/kg	100	335
193-39-5	Indeno(1,2,3-cd)pyrene	U	10.0	ug/kg	10.0	33.5
78-59-1	Isophorone	TU	100	ug/kg	100	335
621-64-7	N-Nitrosodipropylamine	U	100	ug/kg	100	335
91-20-3	Naphthalene	U	10.0	ug/kg	10.0	33.5
98-95-3	Nitrobenzene	U	100	ug/kg	100	335
87-86-5	Pentachlorophenol	U	100	ug/kg	100	335
85-01-8	Phenanthrene	U	10.0	ug/kg	10.0	33.5
108-95-2	Phenol	U	100	ug/kg	100	335
129-00-0	Pyrene	U	10.0	ug/kg	10.0	33.5
126-73-8	Tributylphosphate	U	100	ug/kg	100	335
108-60-1	bis(2-Chloro-1-methylethyl)ether	U	100	ug/kg	100	335
111-91-1	bis(2-Chloroethoxy)methane	U	100	ug/kg	100	335
111-44-4	bis(2-Chloroethyl) ether	U	100	ug/kg	100	335
117-81-7	bis(2-Ethylhexyl)phthalate	U	100	ug/kg	100	335
99-09-2	m-Nitroaniline	U	100	ug/kg	100	335
95-48-7	o-Cresol	U	100	ug/kg	100	335
88-74-4	o-Nitroaniline	U	110	ug/kg	110	335
100-01-6	p-Nitroaniline	U	100	ug/kg	100	335

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 16, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1520972											
QC1203427401 LCS											
1,2,4-Trichlorobenzene	1670			1310	ug/kg		79	(42%-102%)	JMB3	11/06/15	17:57
1,2-Dichlorobenzene	1670			1450	ug/kg		87	(39%-100%)			
1,3-Dichlorobenzene	1670			1170	ug/kg		70	(39%-95%)			
1,4-Dichlorobenzene	1670			1210	ug/kg		73	(39%-98%)			
2,4,5-Trichlorophenol	1670			1470	ug/kg		88	(45%-111%)			
2,4-Dichlorophenol	1670			1370	ug/kg		82	(44%-108%)			
2,4-Dimethylphenol	1670			1310	ug/kg		79	(41%-106%)			
2,4-Dinitrophenol	1670			1050	ug/kg		63	(26%-90%)			
2,4-Dinitrotoluene	1670			1450	ug/kg		87	(46%-115%)			
2,6-Dinitrotoluene	1670			1440	ug/kg		86	(46%-112%)			
2-Chloronaphthalene	1670			1320	ug/kg		79	(44%-102%)			
2-Chlorophenol	1670			1330	ug/kg		80	(41%-110%)			
2-Methyl-4,6-dinitrophenol	1670			1320	ug/kg		79	(31%-100%)			
2-Methylnaphthalene	1670			1090	ug/kg		65	(42%-103%)			
2-Nitrophenol	1670			1500	ug/kg		90	(42%-112%)			
3,3'-Dichlorobenzidine	1670			1250	ug/kg		75	(39%-104%)			
4-Bromophenylphenylether	1670			1460	ug/kg		88	(46%-112%)			
4-Chloro-3-methylphenol	1670			1240	ug/kg		74	(42%-116%)			
4-Chloroaniline	1670			1240	ug/kg		75	(37%-113%)			
4-Chlorophenylphenylether	1670			1460	ug/kg		87	(48%-113%)			

GEL LABORATORIES LLC
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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1520972										
4-Nitrophenol	1670			1100	ug/kg		66	(27%-125%)	JMB3	11/06/15 17:57
Acenaphthene	1670			1350	ug/kg		81	(45%-103%)		
Acenaphthylene	1670			1400	ug/kg		84	(46%-107%)		
Anthracene	1670			1330	ug/kg		80	(47%-104%)		
Benzo(a)anthracene	1670			1450	ug/kg		87	(47%-107%)		
Benzo(a)pyrene	1670			1230	ug/kg		74	(46%-110%)		
Benzo(b)fluoranthene	1670			1220	ug/kg		73	(47%-112%)		
Benzo(ghi)perylene	1670			1230	ug/kg		74	(33%-125%)		
Benzo(k)fluoranthene	1670			1190	ug/kg		71	(46%-115%)		
Butylbenzylphthalate	1670			1810	ug/kg		109	(42%-120%)		
Carbazole	1670			1380	ug/kg		83	(46%-112%)		
Chrysene	1670			1470	ug/kg		88	(45%-109%)		
Di-n-butylphthalate	1670			1650	ug/kg		99	(47%-115%)		
Di-n-octylphthalate	1670			2000	ug/kg		120	(41%-128%)		
Dibenzo(a,h)anthracene	1670			1380	ug/kg		83	(34%-137%)		
Dibenzofuran	1670			1340	ug/kg		80	(48%-112%)		
Diethylphthalate	1670			1430	ug/kg		86	(45%-113%)		
Dimethylphthalate	1670			1460	ug/kg		88	(47%-110%)		
Fluoranthene	1670			1390	ug/kg		84	(44%-112%)		
Fluorene	1670			1340	ug/kg		80	(45%-107%)		
Hexachlorobenzene	1670			1320	ug/kg		79	(44%-108%)		

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1520972										
Hexachlorobutadiene	1670			1180	ug/kg		71	(40%-110%)		
Hexachlorocyclopentadiene	1670			957	ug/kg		57	(27%-84%)	JMB3	11/06/15 17:57
Hexachloroethane	1670			1470	ug/kg		88	(38%-103%)		
Indeno(1,2,3-cd)pyrene	1670			1340	ug/kg		80	(38%-131%)		
Isophorone	1670		BD	4620	ug/kg		277*	(42%-107%)		11/09/15 11:16
N-Nitrosodipropylamine	1670			1630	ug/kg		98	(36%-109%)		11/06/15 17:57
Naphthalene	1670			1330	ug/kg		80	(43%-103%)		
Nitrobenzene	1670			1530	ug/kg		92	(41%-109%)		
Pentachlorophenol	1670			1360	ug/kg		82	(30%-106%)		
Phenanthrene	1670			1320	ug/kg		79	(47%-103%)		
Phenol	1670			1320	ug/kg		79	(38%-111%)		
Pyrene	1670			1460	ug/kg		88	(38%-111%)		
Tributylphosphate	1670		B	1930	ug/kg		116	(43%-123%)		
bis(2-Chloro-1-methylethyl)ether	1670			1730	ug/kg		104	(35%-114%)		
bis(2-Chloroethoxy)methane	1670			1450	ug/kg		87	(45%-110%)		
bis(2-Chloroethyl) ether	1670			1390	ug/kg		83	(41%-110%)		
bis(2-Ethylhexyl)phthalate	1670			1820	ug/kg		109	(42%-120%)		
m-Nitroaniline	1670			1210	ug/kg		73	(35%-131%)		
o-Cresol	1670			1640	ug/kg		99	(40%-111%)		
o-Nitroaniline	1670			1500	ug/kg		90	(39%-119%)		
p-Nitroaniline	1670			1370	ug/kg		82	(34%-138%)		
**2,4,6-Tribromophenol	3330			2810	ug/kg		84	(12%-129%)		

GEL LABORATORIES LLC
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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1520972										
**2-Fluorobiphenyl	1670			1300	ug/kg		78	(15%-110%)		
**2-Fluorophenol	3330			3280	ug/kg		98	(10%-115%)	JMB3	11/06/15 17:57
**Nitrobenzene-d5	1670			1480	ug/kg		89	(13%-112%)		
**Phenol-d5	3330			2780	ug/kg		83	(15%-117%)		
**p-Terphenyl-d14	1670			1430	ug/kg		86	(24%-141%)		
QC1203427400 MB										
1,2,4-Trichlorobenzene			U	99.9	ug/kg					11/06/15 17:25
1,2-Dichlorobenzene			U	99.9	ug/kg					
1,3-Dichlorobenzene			U	99.9	ug/kg					
1,4-Dichlorobenzene			U	99.9	ug/kg					
2,4,5-Trichlorophenol			U	99.9	ug/kg					
2,4-Dichlorophenol			U	99.9	ug/kg					
2,4-Dimethylphenol			U	99.9	ug/kg					
2,4-Dinitrophenol			U	99.9	ug/kg					
2,4-Dinitrotoluene			U	99.9	ug/kg					
2,6-Dinitrotoluene			U	99.9	ug/kg					
2-Chloronaphthalene			U	9.99	ug/kg					
2-Chlorophenol			U	99.9	ug/kg					
2-Methyl-4,6-dinitrophenol			U	99.9	ug/kg					
2-Methylnaphthalene			U	9.99	ug/kg					
2-Nitrophenol			U	99.9	ug/kg					
3,3'-Dichlorobenzidine			U	99.9	ug/kg					
4-Bromophenylphenylether			U	99.9	ug/kg					

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1520972											
4-Chloro-3-methylphenol			U	133	ug/kg				JMB3	11/06/15	17:25
4-Chloroaniline			U	99.9	ug/kg						
4-Chlorophenylphenylether			U	99.9	ug/kg						
4-Nitrophenol			U	99.9	ug/kg						
Acenaphthene			U	9.99	ug/kg						
Acenaphthylene			U	9.99	ug/kg						
Anthracene			U	9.99	ug/kg						
Benzo(a)anthracene			U	9.99	ug/kg						
Benzo(a)pyrene			U	9.99	ug/kg						
Benzo(b)fluoranthene			U	9.99	ug/kg						
Benzo(ghi)perylene			U	9.99	ug/kg						
Benzo(k)fluoranthene			U	9.99	ug/kg						
Butylbenzylphthalate			U	99.9	ug/kg						
Carbazole			U	9.99	ug/kg						
Chrysene			U	9.99	ug/kg						
Di-n-butylphthalate			U	99.9	ug/kg						
Di-n-octylphthalate			U	99.9	ug/kg						
Dibenzo(a,h)anthracene			U	9.99	ug/kg						
Dibenzofuran			U	99.9	ug/kg						
Diethylphthalate			U	99.9	ug/kg						
Dimethylphthalate			U	99.9	ug/kg						

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1520972											
Fluoranthene			U	9.99	ug/kg						
Fluorene			U	9.99	ug/kg				JMB3	11/06/15	17:25
Hexachlorobenzene			U	99.9	ug/kg						
Hexachlorobutadiene			U	99.9	ug/kg						
Hexachlorocyclopentadiene			U	99.9	ug/kg						
Hexachloroethane			U	99.9	ug/kg						
Indeno(1,2,3-cd)pyrene			U	9.99	ug/kg						
Isophorone				1500	ug/kg						
N-Nitrosodipropylamine			U	99.9	ug/kg						
Naphthalene			U	9.99	ug/kg						
Nitrobenzene			U	99.9	ug/kg						
Pentachlorophenol			U	99.9	ug/kg						
Phenanthrene			U	9.99	ug/kg						
Phenol			U	99.9	ug/kg						
Pyrene			U	9.99	ug/kg						
Tributylphosphate			J	158	ug/kg						
bis(2-Chloro-1-methylethyl)ether			U	99.9	ug/kg						
bis(2-Chloroethoxy)methane			U	99.9	ug/kg						
bis(2-Chloroethyl) ether			U	99.9	ug/kg						
bis(2-Ethylhexyl)phthalate			U	99.9	ug/kg						
m-Nitroaniline			U	99.9	ug/kg						
o-Cresol			U	99.9	ug/kg						

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1520972										
o-Nitroaniline			U	110	ug/kg					
p-Nitroaniline			U	99.9	ug/kg				JMB3	11/06/15 17:25
**2,4,6-Tribromophenol	3330			2830	ug/kg		85	(12%-129%)		
**2-Fluorobiphenyl	1670			1360	ug/kg		82	(15%-110%)		
**2-Fluorophenol	3330			3470	ug/kg		104	(10%-115%)		
**Nitrobenzene-d5	1670			1550	ug/kg		93	(13%-112%)		
**Phenol-d5	3330			2900	ug/kg		87	(15%-117%)		
**p-Terphenyl-d14	1670			1550	ug/kg		93	(24%-141%)		
Batch 1521644										
QC1203429165 LCS										
1,2,4-Trichlorobenzene	1670			1230	ug/kg		74	(42%-102%)	JMB3	11/10/15 19:31
1,2-Dichlorobenzene	1670			1100	ug/kg		66	(39%-100%)		
1,3-Dichlorobenzene	1670			1060	ug/kg		64	(39%-95%)		
1,4-Dichlorobenzene	1670			1060	ug/kg		64	(39%-98%)		
2,4,5-Trichlorophenol	1670			1420	ug/kg		85	(45%-111%)		
2,4-Dichlorophenol	1670			1320	ug/kg		79	(44%-108%)		
2,4-Dimethylphenol	1670			1320	ug/kg		79	(41%-106%)		
2,4-Dinitrophenol	1670			1140	ug/kg		69	(26%-90%)		
2,4-Dinitrotoluene	1670			1550	ug/kg		93	(46%-115%)		
2,6-Dinitrotoluene	1670			1460	ug/kg		88	(46%-112%)		
2-Chloronaphthalene	1670			1280	ug/kg		77	(44%-102%)		
2-Chlorophenol	1670			1170	ug/kg		71	(41%-110%)		
2-Methyl-4,6-dinitrophenol	1670			1340	ug/kg		80	(31%-100%)		

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1521644											
2-Methylnaphthalene	1670			1220	ug/kg		73	(42%-103%)			
2-Nitrophenol	1670			1620	ug/kg		97	(42%-112%)	JMB3	11/10/15	19:31
3,3'-Dichlorobenzidine	1670			1250	ug/kg		75	(39%-104%)			
4-Bromophenylphenylether	1670			1510	ug/kg		91	(46%-112%)			
4-Chloro-3-methylphenol	1670			1490	ug/kg		89	(42%-116%)			
4-Chloroaniline	1670			1140	ug/kg		69	(37%-113%)			
4-Chlorophenylphenylether	1670			1250	ug/kg		75	(48%-113%)			
4-Nitrophenol	1670			1140	ug/kg		68	(27%-125%)			
Acenaphthene	1670			1390	ug/kg		83	(45%-103%)			
Acenaphthylene	1670			1380	ug/kg		83	(46%-107%)			
Anthracene	1670			1380	ug/kg		83	(47%-104%)			
Benzo(a)anthracene	1670			1480	ug/kg		89	(47%-107%)			
Benzo(a)pyrene	1670			1330	ug/kg		80	(46%-110%)			
Benzo(b)fluoranthene	1670			1320	ug/kg		79	(47%-112%)			
Benzo(ghi)perylene	1670			1330	ug/kg		80	(33%-125%)			
Benzo(k)fluoranthene	1670			1330	ug/kg		80	(46%-115%)			
Butylbenzylphthalate	1670			2320	ug/kg		139*	(42%-120%)			
Carbazole	1670			1450	ug/kg		87	(46%-112%)			
Chrysene	1670			1510	ug/kg		91	(45%-109%)			
Di-n-butylphthalate	1670			2040	ug/kg		122*	(47%-115%)			
Di-n-octylphthalate	1670			2040	ug/kg		122	(41%-128%)			
Dibenzo(a,h)anthracene	1670			1370	ug/kg		82	(34%-137%)			

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1521644											
Dibenzofuran	1670			1360	ug/kg		82	(48%-112%)			
Diethylphthalate	1670			1350	ug/kg		81	(45%-113%)	JMB3	11/10/15	19:31
Dimethylphthalate	1670			1500	ug/kg		90	(47%-110%)			
Fluoranthene	1670			1610	ug/kg		97	(44%-112%)			
Fluorene	1670			1150	ug/kg		69	(45%-107%)			
Hexachlorobenzene	1670			1390	ug/kg		83	(44%-108%)			
Hexachlorobutadiene	1670			1250	ug/kg		75	(40%-110%)			
Hexachlorocyclopentadiene	1670			817	ug/kg		49	(27%-84%)			
Hexachloroethane	1670			1110	ug/kg		67	(38%-103%)			
Indeno(1,2,3-cd)pyrene	1670			1370	ug/kg		82	(38%-131%)			
Isophorone	1670		B	2030	ug/kg		122*	(42%-107%)			
N-Nitrosodipropylamine	1670			1260	ug/kg		75	(36%-109%)			
Naphthalene	1670			1210	ug/kg		73	(43%-103%)			
Nitrobenzene	1670			1680	ug/kg		101	(41%-109%)			
Pentachlorophenol	1670			1380	ug/kg		83	(30%-106%)			
Phenanthrene	1670			1370	ug/kg		82	(47%-103%)			
Phenol	1670			1200	ug/kg		72	(38%-111%)			
Pyrene	1670			1930	ug/kg		116*	(38%-111%)			
Tributylphosphate	1670			1520	ug/kg		91	(43%-123%)			
bis(2-Chloro-1-methylethyl)ether	1670			1280	ug/kg		77	(35%-114%)			
bis(2-Chloroethoxy)methane	1670			1310	ug/kg		78	(45%-110%)			
bis(2-Chloroethyl) ether	1670			1250	ug/kg		75	(41%-110%)			

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS										
Batch 1521644										
bis(2-Ethylhexyl)phthalate	1670			1900	ug/kg		114	(42%-120%)		
m-Nitroaniline	1670			1250	ug/kg		75	(35%-131%)	JMB3	11/10/15 19:31
o-Cresol	1670			1250	ug/kg		75	(40%-111%)		
o-Nitroaniline	1670			1570	ug/kg		94	(39%-119%)		
p-Nitroaniline	1670			1250	ug/kg		75	(34%-138%)		
**2,4,6-Tribromophenol	3330			2530	ug/kg		76	(12%-129%)		
**2-Fluorobiphenyl	1670			1200	ug/kg		72	(15%-110%)		
**2-Fluorophenol	3330			2480	ug/kg		74	(10%-115%)		
**Nitrobenzene-d5	1670			1600	ug/kg		96	(13%-112%)		
**Phenol-d5	3330			2560	ug/kg		77	(15%-117%)		
**p-Terphenyl-d14	1670			1900	ug/kg		114	(24%-141%)		
QC1203429164 MB										
1,2,4-Trichlorobenzene			U	99.9	ug/kg					11/10/15 19:03
1,2-Dichlorobenzene			U	99.9	ug/kg					
1,3-Dichlorobenzene			U	99.9	ug/kg					
1,4-Dichlorobenzene			U	99.9	ug/kg					
2,4,5-Trichlorophenol			U	99.9	ug/kg					
2,4-Dichlorophenol			U	99.9	ug/kg					
2,4-Dimethylphenol			U	99.9	ug/kg					
2,4-Dinitrophenol			U	99.9	ug/kg					
2,4-Dinitrotoluene			U	99.9	ug/kg					
2,6-Dinitrotoluene			U	99.9	ug/kg					
2-Chloronaphthalene			U	9.99	ug/kg					

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QC Summary

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1521644											
2-Chlorophenol			U	99.9	ug/kg				JMB3	11/10/15	19:03
2-Methyl-4,6-dinitrophenol			U	99.9	ug/kg						
2-Methylnaphthalene			U	9.99	ug/kg						
2-Nitrophenol			U	99.9	ug/kg						
3,3'-Dichlorobenzidine			U	99.9	ug/kg						
4-Bromophenylphenylether			U	99.9	ug/kg						
4-Chloro-3-methylphenol			U	133	ug/kg						
4-Chloroaniline			U	99.9	ug/kg						
4-Chlorophenylphenylether			U	99.9	ug/kg						
4-Nitrophenol			U	99.9	ug/kg						
Acenaphthene			U	9.99	ug/kg						
Acenaphthylene			U	9.99	ug/kg						
Anthracene			U	9.99	ug/kg						
Benzo(a)anthracene			U	9.99	ug/kg						
Benzo(a)pyrene			U	9.99	ug/kg						
Benzo(b)fluoranthene			U	9.99	ug/kg						
Benzo(ghi)perylene			U	9.99	ug/kg						
Benzo(k)fluoranthene			U	9.99	ug/kg						
Butylbenzylphthalate			U	99.9	ug/kg						
Carbazole			U	9.99	ug/kg						
Chrysene			U	9.99	ug/kg						

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Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatile-GC/MS											
Batch 1521644											
Di-n-butylphthalate			U	99.9	ug/kg						
Di-n-octylphthalate			U	99.9	ug/kg				JMB3	11/10/15	19:03
Dibenzo(a,h)anthracene			U	9.99	ug/kg						
Dibenzofuran			U	99.9	ug/kg						
Diethylphthalate			U	99.9	ug/kg						
Dimethylphthalate			U	99.9	ug/kg						
Fluoranthene			U	9.99	ug/kg						
Fluorene			U	9.99	ug/kg						
Hexachlorobenzene			U	99.9	ug/kg						
Hexachlorobutadiene			U	99.9	ug/kg						
Hexachlorocyclopentadiene			U	99.9	ug/kg						
Hexachloroethane			U	99.9	ug/kg						
Indeno(1,2,3-cd)pyrene			U	9.99	ug/kg						
Isophorone				1460	ug/kg						
N-Nitrosodipropylamine			U	99.9	ug/kg						
Naphthalene			U	9.99	ug/kg						
Nitrobenzene			U	99.9	ug/kg						
Pentachlorophenol			U	99.9	ug/kg						
Phenanthrene			U	9.99	ug/kg						
Phenol			U	99.9	ug/kg						
Pyrene			U	9.99	ug/kg						
Tributylphosphate			U	99.9	ug/kg						

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QC Summary

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Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
bis(2-Chloro-1-methylethyl)ether				U	99.9	ug/kg					
bis(2-Chloroethoxy)methane				U	99.9	ug/kg				JMB3	11/10/15 19:03
bis(2-Chloroethyl) ether				U	99.9	ug/kg					
bis(2-Ethylhexyl)phthalate				U	99.9	ug/kg					
m-Nitroaniline				U	99.9	ug/kg					
o-Cresol				U	99.9	ug/kg					
o-Nitroaniline				U	110	ug/kg					
p-Nitroaniline				U	99.9	ug/kg					
**2,4,6-Tribromophenol	3330				3290	ug/kg		99	(12%-129%)		
**2-Fluorobiphenyl	1670				1470	ug/kg		88	(15%-110%)		
**2-Fluorophenol	3330				2890	ug/kg		87	(10%-115%)		
**Nitrobenzene-d5	1670				1570	ug/kg		94	(13%-112%)		
**Phenol-d5	3330				2910	ug/kg		87	(15%-117%)		
**p-Terphenyl-d14	1670				1730	ug/kg		104	(24%-141%)		
QC1203429168 384871004 MS											
1,2,4-Trichlorobenzene	1670	U	100		1300	ug/kg		78	(26%-104%)		11/10/15 20:56
1,2-Dichlorobenzene	1670	U	100		1130	ug/kg		68	(26%-98%)		
1,3-Dichlorobenzene	1670	U	100		1160	ug/kg		69	(27%-92%)		
1,4-Dichlorobenzene	1670	U	100		1180	ug/kg		71	(27%-95%)		
2,4,5-Trichlorophenol	1670	U	100		1440	ug/kg		86	(26%-120%)		
2,4-Dichlorophenol	1670	U	100		1350	ug/kg		81	(21%-119%)		
2,4-Dimethylphenol	1670	U	100		1260	ug/kg		75	(27%-111%)		
2,4-Dinitrophenol	1670	U	100		1020	ug/kg		61	(12%-112%)		

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Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
2,4-Dinitrotoluene	1670	U	100		1510	ug/kg		90	(32%-118%)	JMB3	11/10/15 20:56
2,6-Dinitrotoluene	1670	U	100		1470	ug/kg		88	(32%-114%)		
2-Chloronaphthalene	1670	U	10.0		1310	ug/kg		78	(25%-111%)		
2-Chlorophenol	1670	U	100		1300	ug/kg		78	(20%-114%)		
2-Methyl-4,6-dinitrophenol	1670	U	100		1170	ug/kg		70	(17%-115%)		
2-Methylnaphthalene	1670	U	10.0		1200	ug/kg		72	(25%-112%)		
2-Nitrophenol	1670	U	100		1230	ug/kg		73	(23%-115%)		
3,3'-Dichlorobenzidine	1670	U	100		1260	ug/kg		75	(21%-107%)		
4-Bromophenylphenylether	1670	U	100		1370	ug/kg		82	(29%-121%)		
4-Chloro-3-methylphenol	1670	U	134		1370	ug/kg		82	(29%-119%)		
4-Chloroaniline	1670	U	100		1260	ug/kg		75	(22%-120%)		
4-Chlorophenylphenylether	1670	U	100		1510	ug/kg		90	(29%-119%)		
4-Nitrophenol	1670	U	100		1080	ug/kg		65	(20%-120%)		
Acenaphthene	1670	U	10.0		1360	ug/kg		81	(27%-111%)		
Acenaphthylene	1670	U	10.0		1390	ug/kg		83	(26%-117%)		
Anthracene	1670	U	10.0		1360	ug/kg		81	(29%-118%)		
Benzo(a)anthracene	1670	U	10.0		1460	ug/kg		87	(25%-126%)		
Benzo(a)pyrene	1670	U	10.0		1290	ug/kg		77	(28%-122%)		
Benzo(b)fluoranthene	1670	U	10.0		1280	ug/kg		76	(28%-127%)		
Benzo(ghi)perylene	1670	U	10.0		1450	ug/kg		87	(22%-113%)		
Benzo(k)fluoranthene	1670	U	10.0		1290	ug/kg		77	(28%-131%)		

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Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
Butylbenzylphthalate	1670	U	100		1820	ug/kg		109	(26%-133%)		
Carbazole	1670	U	10.0		1340	ug/kg		80	(27%-123%)	JMB3	11/10/15 20:56
Chrysene	1670	U	10.0		1530	ug/kg		91	(26%-122%)		
Di-n-butylphthalate	1670	U	100		1600	ug/kg		93	(26%-126%)		
Di-n-octylphthalate	1670	U	100		1970	ug/kg		118	(29%-130%)		
Dibenzo(a,h)anthracene	1670	U	10.0		1500	ug/kg		90	(19%-133%)		
Dibenzofuran	1670	U	100		1350	ug/kg		81	(30%-119%)		
Diethylphthalate	1670	U	100		1490	ug/kg		88	(26%-124%)		
Dimethylphthalate	1670	U	100		1480	ug/kg		89	(27%-120%)		
Fluoranthene	1670	U	10.0		1220	ug/kg		73	(24%-123%)		
Fluorene	1670	U	10.0		1370	ug/kg		82	(27%-117%)		
Hexachlorobenzene	1670	U	100		1180	ug/kg		70	(30%-113%)		
Hexachlorobutadiene	1670	U	100		1300	ug/kg		78	(25%-109%)		
Hexachlorocyclopentadiene	1670	U	100		1020	ug/kg		61	(10%-100%)		
Hexachloroethane	1670	U	100		1350	ug/kg		80	(23%-98%)		
Indeno(1,2,3-cd)pyrene	1670	U	10.0		1460	ug/kg		87	(21%-126%)		
Isophorone	1670	TU	100	BT	2890	ug/kg		173*	(29%-107%)		
N-Nitrosodipropylamine	1670	U	100		1440	ug/kg		86	(25%-113%)		
Naphthalene	1670	U	10.0		1280	ug/kg		77	(23%-111%)		
Nitrobenzene	1670	U	100		1470	ug/kg		88	(26%-109%)		
Pentachlorophenol	1670	U	100		1240	ug/kg		74	(17%-119%)		
Phenanthrene	1670	U	10.0		1360	ug/kg		81	(26%-121%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
Phenol	1670	U	100		1280	ug/kg		76	(28%-111%)		
Pyrene	1670	U	10.0		1530	ug/kg		91	(23%-127%)	JMB3	11/10/15 20:56
Tributylphosphate	1670	U	100		1730	ug/kg		103	(25%-131%)		
bis(2-Chloro-1-methylethyl)ether	1670	U	100		1290	ug/kg		77	(21%-116%)		
bis(2-Chloroethoxy)methane	1670	U	100		1400	ug/kg		84	(30%-111%)		
bis(2-Chloroethyl) ether	1670	U	100		1370	ug/kg		82	(27%-110%)		
bis(2-Ethylhexyl)phthalate	1670	U	100		1830	ug/kg		108	(27%-131%)		
m-Nitroaniline	1670	U	100		1280	ug/kg		77	(24%-137%)		
o-Cresol	1670	U	100		1260	ug/kg		76	(28%-114%)		
o-Nitroaniline	1670	U	110		1510	ug/kg		90	(27%-120%)		
p-Nitroaniline	1670	U	100		1440	ug/kg		86	(19%-140%)		
**2,4,6-Tribromophenol	3350		2400		2700	ug/kg		81	(12%-129%)		
**2-Fluorobiphenyl	1670		1140		1250	ug/kg		74	(15%-110%)		
**2-Fluorophenol	3350		2590		2940	ug/kg		88	(10%-115%)		
**Nitrobenzene-d5	1670		1470		1390	ug/kg		83	(13%-112%)		
**Phenol-d5	3350		2200		2690	ug/kg		80	(15%-117%)		
**p-Terphenyl-d14	1670		1480		1470	ug/kg		88	(24%-141%)		
QC1203429169 384871004 MSD											
1,2,4-Trichlorobenzene	1670	U	100		1370	ug/kg	6	82	(0%-30%)		11/10/15 21:24
1,2-Dichlorobenzene	1670	U	100		1160	ug/kg	2	69	(0%-30%)		
1,3-Dichlorobenzene	1670	U	100		1200	ug/kg	3	72	(0%-30%)		
1,4-Dichlorobenzene	1670	U	100		1240	ug/kg	5	74	(0%-30%)		
2,4,5-Trichlorophenol	1670	U	100		1460	ug/kg	2	87	(0%-30%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
2,4-Dichlorophenol	1670	U	100		1410	ug/kg	4	84	(0%-30%)	JMB3	11/10/15 21:24
2,4-Dimethylphenol	1670	U	100		1250	ug/kg	1	75	(0%-30%)		
2,4-Dinitrophenol	1670	U	100		1020	ug/kg	0	61	(0%-30%)		
2,4-Dinitrotoluene	1670	U	100		1600	ug/kg	6	96	(0%-30%)		
2,6-Dinitrotoluene	1670	U	100		1400	ug/kg	4	84	(0%-30%)		
2-Chloronaphthalene	1670	U	10.0		1290	ug/kg	1	77	(0%-30%)		
2-Chlorophenol	1670	U	100		1300	ug/kg	0	78	(0%-30%)		
2-Methyl-4,6-dinitrophenol	1670	U	100		1290	ug/kg	10	77	(0%-30%)		
2-Methylnaphthalene	1670	U	10.0		1290	ug/kg	7	77	(0%-30%)		
2-Nitrophenol	1670	U	100		1540	ug/kg	23	92	(0%-30%)		
3,3'-Dichlorobenzidine	1670	U	100		1250	ug/kg	1	75	(0%-30%)		
4-Bromophenylphenylether	1670	U	100		1640	ug/kg	18	98	(0%-30%)		
4-Chloro-3-methylphenol	1670	U	134		1510	ug/kg	10	90	(0%-30%)		
4-Chloroaniline	1670	U	100		1190	ug/kg	6	71	(0%-30%)		
4-Chlorophenylphenylether	1670	U	100		1620	ug/kg	8	97	(0%-30%)		
4-Nitrophenol	1670	U	100		1150	ug/kg	6	69	(0%-30%)		
Acenaphthene	1670	U	10.0		1440	ug/kg	6	86	(0%-30%)		
Acenaphthylene	1670	U	10.0		1290	ug/kg	7	77	(0%-30%)		
Anthracene	1670	U	10.0		1390	ug/kg	2	83	(0%-30%)		
Benzo(a)anthracene	1670	U	10.0		1480	ug/kg	1	88	(0%-30%)		
Benzo(a)pyrene	1670	U	10.0		1340	ug/kg	4	80	(0%-30%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
Benzo(b)fluoranthene	1670	U	10.0		1350	ug/kg	6	81	(0%-30%)		
Benzo(ghi)perylene	1670	U	10.0		1380	ug/kg	5	83	(0%-30%)	JMB3	11/10/15 21:24
Benzo(k)fluoranthene	1670	U	10.0		1340	ug/kg	4	80	(0%-30%)		
Butylbenzylphthalate	1670	U	100		1880	ug/kg	4	113	(0%-30%)		
Carbazole	1670	U	10.0		1410	ug/kg	5	84	(0%-30%)		
Chrysene	1670	U	10.0		1540	ug/kg	1	92	(0%-30%)		
Di-n-butylphthalate	1670	U	100		1670	ug/kg	4	97	(0%-30%)		
Di-n-octylphthalate	1670	U	100		2030	ug/kg	3	121	(0%-30%)		
Dibenzo(a,h)anthracene	1670	U	10.0		1440	ug/kg	4	86	(0%-30%)		
Dibenzofuran	1670	U	100		1430	ug/kg	6	86	(0%-30%)		
Diethylphthalate	1670	U	100		1570	ug/kg	6	93	(0%-30%)		
Dimethylphthalate	1670	U	100		1420	ug/kg	4	85	(0%-30%)		
Fluoranthene	1670	U	10.0		1380	ug/kg	12	82	(0%-30%)		
Fluorene	1670	U	10.0		1500	ug/kg	9	89	(0%-30%)		
Hexachlorobenzene	1670	U	100		1450	ug/kg	20	86	(0%-30%)		
Hexachlorobutadiene	1670	U	100		1390	ug/kg	7	83	(0%-30%)		
Hexachlorocyclopentadiene	1670	U	100		828	ug/kg	21	49	(0%-30%)		
Hexachloroethane	1670	U	100		1210	ug/kg	11	72	(0%-30%)		
Indeno(1,2,3-cd)pyrene	1670	U	10.0		1390	ug/kg	5	83	(0%-30%)		
Isophorone	1670	TU	100	B	1500	ug/kg	63*	89	(0%-30%)		
N-Nitrosodipropylamine	1670	U	100		1280	ug/kg	12	76	(0%-30%)		
Naphthalene	1670	U	10.0		1330	ug/kg	3	79	(0%-30%)		

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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatile-GC/MS											
Batch 1521644											
Nitrobenzene	1670	U	100		1540	ug/kg	4	92	(0%-30%)		
Pentachlorophenol	1670	U	100		1270	ug/kg	2	76	(0%-30%)	JMB3	11/10/15 21:24
Phenanthrene	1670	U	10.0		1380	ug/kg	2	82	(0%-30%)		
Phenol	1670	U	100		1310	ug/kg	3	78	(0%-30%)		
Pyrene	1670	U	10.0		1590	ug/kg	4	95	(0%-30%)		
Tributylphosphate	1670	U	100		1960	ug/kg	13	117	(0%-30%)		
bis(2-Chloro-1-methylethyl)ether	1670	U	100		1340	ug/kg	3	80	(0%-30%)		
bis(2-Chloroethoxy)methane	1670	U	100		1450	ug/kg	3	86	(0%-30%)		
bis(2-Chloroethyl) ether	1670	U	100		1390	ug/kg	2	83	(0%-30%)		
bis(2-Ethylhexyl)phthalate	1670	U	100		1860	ug/kg	2	110	(0%-30%)		
m-Nitroaniline	1670	U	100		1130	ug/kg	12	68	(0%-30%)		
o-Cresol	1670	U	100		1310	ug/kg	3	78	(0%-30%)		
o-Nitroaniline	1670	U	110		1500	ug/kg	0	90	(0%-30%)		
p-Nitroaniline	1670	U	100		1510	ug/kg	5	90	(0%-30%)		
**2,4,6-Tribromophenol	3350		2400		2930	ug/kg		88	(12%-129%)		
**2-Fluorobiphenyl	1670		1140		1280	ug/kg		77	(15%-110%)		
**2-Fluorophenol	3350		2590		2630	ug/kg		78	(10%-115%)		
**Nitrobenzene-d5	1670		1470		1440	ug/kg		86	(13%-112%)		
**Phenol-d5	3350		2200		2680	ug/kg		80	(15%-117%)		
**p-Terphenyl-d14	1670		1480		1530	ug/kg		91	(24%-141%)		

Notes:

The Qualifiers in this report are defined as follows:

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QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

A	The TIC is a suspected aldol-condensation product
B	The analyte was detected in both the associated QC blank and in the sample.
C	Analyte has been confirmed by GC/MS analysis
D	Results are reported from a diluted aliquot of sample.
E	Concentration exceeds the calibration range of the instrument
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
N	Spike Sample recovery is outside control limits.
P	Aroclor target analyte with greater than 25% difference between column analyses.
T	Spike and/or spike duplicate sample recovery is outside control limits.
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
o	Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GEL Laboratories LLC

Report Date: November 16 2015

Semi-Volatile

Surrogate Recovery Report

SDG Number: GEL384871

Matrix Type: SOLID

Sample ID	Client ID	2FP %REC		PHL %REC		NBZ %REC		FBP %REC		TBP %REC		TPH %REC	
1203427400	MB for batch 1520922	104		87		93		82		85		93	
1203427401	LCS for batch 1520922	98		83		89		78		84		86	
384871003	B33BY1	60		59		61		57		60		88	
1203427401	LCS for batch 1520922DL	90	D	92	D	95	D	93	D	106	D	99	D
1203429164	MB for batch 1521640	87		87		94		88		99		104	
1203429165	LCS for batch 1521640	74		77		96		72		76		114	
384871004	B33BY5	77		66		88		68		72		88	
1203429168	B33BY5MS	88		80		83		74		81		88	
1203429169	B33BY5MSD	78		80		86		77		88		91	

Surrogate		Acceptance Limits
2FP	= 2-Fluorophenol	(10%-115%)
PHL	= Phenol-d5	(15%-117%)
NBZ	= Nitrobenzene-d5	(13%-112%)
FBP	= 2-Fluorobiphenyl	(15%-110%)
TBP	= 2,4,6-Tribromophenol	(12%-129%)
TPH	= p-Terphenyl-d14	(24%-141%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1464587
Revision No.: 2

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
09-NOV-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 3541/8270D	Solid	CARE, CPRC, MDNR
Batch ID:	**Sample Numbers:**		
1520972	See Below		

Potentially affected work order(s)(SDG): 384429(EUI-10056),384728(EUI-10059),384871(GEL384871)

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Method Blank contamination

Failed Yield for Surrogates

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	DER Disposition:
1. The 1203427400MB had contamination of a spiked analyte.	1. Method blank 1203427400 (MB) displayed a target analyte hit above the reporting limit. All client samples that also displayed a hit for this target analyte were re-extracted. Any samples that did not display a hit for this analyte or did not request analysis for this analyte were reported.
2. Samples 384429001 and 384728001 failed surrogate recovery.	2. Samples (See Below) did not meet surrogate recovery acceptance criteria. The samples were analyzed at a dilution. As a result, one or more surrogates were diluted out of the acceptance limits. 384429001 (0680-08 151026) 2,4,6-Tribromophenol [0* (12%-129%)] and Phenol-d5 [13* (15%-117%)]. 384728001 (0183-12 151030) 2,4,6-Tribromophenol [0* (12%-129%)].
3. The 1203427401LCS failed spike recovery.	3. The LCS and/or LCSD (See Below) did not meet spike recovery acceptance criteria. Since the target analytes were not detected in the associated samples above the reporting limits, the positive bias had no adverse impact on the data. 1203427401 (LCS) Pyridine [66* (34%-60%)].
4. The 1203427404MS failed spike recovery.	4. The MS (See Below) recovered a spiked analyte outside of the established acceptance limits. There is no reportable data for the MS or MSD since Isophorone was detected in the associated MB and the parent sample and the parent sample was re-extracted within holding. 1203427404 (B33BW5MS) Isophorone [23* (29%-107%)].

Originator's Name:
Josh Brooks 09-NOV-15

Data Validator/Group Leader:
Barbara Bailey 16-NOV-15

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1465485
Revision No.:

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
11-NOV-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
SEMIVOA GC/MS	SW846 3541/8270D	Solid	CPRC, UCOR
Batch ID:	**Sample Numbers:**		
1521644	See Below		

Potentially affected work order(s)(SDG): 384871(GEL384871),384986

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Failed RPD for MS/MSD, or PS/PSD

Method Blank contamination

Failed Recovery for LCS/LCSD

Specification and Requirements Exception Description:	DER Disposition:
1. The 1203429164MB was contaminated.	1. Method blank (See Below) displayed a target analyte hit above the reporting limit. All client samples that also displayed a hit for this target analyte were re-extracted. Any samples that did not display a hit for this analyte or did not request analysis for this analyte were reported. 1203429164 (MB) Isophorone.
2. The 1203429165LCS failed spike recovery.	2. The LCS and/or LCSD (See Below) did not meet spike recovery acceptance criteria. Since the target analytes were not detected in the associated samples above the reporting limits, the positive bias had no adverse impact on the data. 1203429165 (LCS) Butylbenzylphthalate [139* (42%-120%)], Di-n-butylphthalate [122* (47%-115%)], Isophorone [122* (42%-107%)] and Pyrene [116* (38%-111%)].
3. The 1203429166MS and 1203429168MS failed spike recovery.	3. The MS or MSD (See Below) recovered spiked analytes outside of the established acceptance limits. Because the recoveries were biased high and the target analytes were not detected in the associated samples above the reporting limit, the data were reported. 1203429166 (RA008-001MS) Pyridine [65* (30%-64%)]. 1203429168 (B33BY5MS) Isophorone [173* (29%-107%)].
4. The RPD values between the 1203429166MS and 1203429167MSD and between the 1203429168MS and 1203429169MSD were not within the acceptance limits.	4. The relative percent difference (RPD) between the MS and MSD (See Below) did not meet acceptance limits. As the individual MS and MSD recoveries were within the acceptance limits, the failures had no adverse impact on the reported sample data. 1203429166MS and 1203429167MSD (RA008-001) Several [See applicable report]. 1203429168MS and 1203429169MSD (B33BY5) Several [See applicable report].

Originator's Name:

Josh Brooks 11-NOV-15

Data Validator/Group Leader:

Herbert Maier 11-NOV-15

FID Diesel Range Organics Analysis

Case Narrative

Diesel Range Organics
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Procedure:	**Analysis of Diesel Range Organics by Flame Ionization Detector**
Analytical Method:	NWTPH-Dx in Soil
Prep Method:	SW846 3541
Analytical Batch Number:	1523066
Prep Batch Number:	1523065

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx in Soil:

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
1203432802	Method Blank (MB)
1203432803	Laboratory Control Sample (LCS)
1203432806	Laboratory Control Sample (LCS)
1203432807	Laboratory Control Sample Duplicate (LCSD)
1203432804	385355008(B33M96) Matrix Spike (MS)
1203432805	385355008(B33M96) Matrix Spike Duplicate (MSD)

Samples 384871 003 and 004 in this SDG were analyzed on a "dry weight corrected" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-003 REV# 25.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standards (ICV or CCV) met the acceptance criteria for the target analytes.

Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS/LCSD) Recovery
The LCS/LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD between the LCS and LCSD met the acceptance limits.

QC Sample Designation
Sample 385355008 (B33M96) was selected for the MS and MSD analyses.

Matrix Spike (MS/MSD) Recovery Statement
The MS/MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Samples 384871003 (B33BY1) and 384871004 (B33BY5) were extracted and analyzed twice due to low surrogate recovery in the first analysis. The second analysis was reported.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation

Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Additional Comments
The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 18 NOV 2015 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

Report Date: November 18, 2015

FID Diesel Range Organics
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871003**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**2.6**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY1**	**Method:**	**NWTPH-Dx in Soil**	**SOP Ref:**	**GL-OA-E-003**
Batch ID:	**1523066**	**Inst:**	**FID7.I**	**Dilution:**	**1**
Run Date:	**11/16/2015 13:06**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/13/2015 10:58**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**111615kero\f7k1609.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
8008-20-6	Kerosene	U	1140	ug/Kg	1140	6840

GEL Laboratories LLC

Report Date: November 18, 2015

FID Diesel Range Organics
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871003**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**2.6**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY1RA**	**Method:**	**NWTPH-Dx in Soil**	**SOP Ref:**	**GL-OA-E-003**
Batch ID:	**1523066**	**Inst:**	**FID7.I**	**Dilution:**	**1**
Run Date:	**11/17/2015 14:38**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/13/2015 10:58**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**111715MO\f7k1708.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
68334-30-5	Diesel Range Organics	U	2220	ug/Kg	2220	6840

GEL Laboratories LLC

Report Date: November 18, 2015

FID Diesel Range Organics
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871004**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY5**	**Method:**	**NWTPH-Dx in Soil**	**SOP Ref:**	**GL-OA-E-003**
Batch ID:	**1523066**	**Inst:**	**FID7.I**	**Dilution:**	**1**
Run Date:	**11/16/2015 13:46**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/13/2015 10:58**	**Aliquot:**	**30.01 g**	**Final Volume:**	**1 mL**
Data File:	**111615kero\f7k1610.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
8008-20-6	Kerosene	U	1120	ug/Kg	1120	6700

GEL Laboratories LLC

Report Date: November 18, 2015

FID Diesel Range Organics
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871004**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY5RA**	**Method:**	**NWTPH-Dx in Soil**	**SOP Ref:**	**GL-OA-E-003**
Batch ID:	**1523066**	**Inst:**	**FID7.I**	**Dilution:**	**1**
Run Date:	**11/17/2015 15:18**	**Analyst:**	**LXA1**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/13/2015 10:58**	**Aliquot:**	**30.01 g**	**Final Volume:**	**1 mL**
Data File:	**111715MO\f7k1709.D**	**Column:**	**DB-5ms**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ
68334-30-5	Diesel Range Organics	U	2180	ug/Kg	2180	6700

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 18, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Diesel Range Organics										
Batch 1523066										
QC1203432803 LCS										
Diesel Range Organics	66600			57100	ug/Kg		86	(70%-130%)	LXA1	11/17/15 13:19
**o-Terphenyl	666			509	ug/Kg		77	(50%-150%)		
QC1203432806 LCS										
Kerosene	33300			31400	ug/Kg		94	(70%-130%)		11/16/15 11:08
**o-Terphenyl	667			577	ug/Kg		86	(50%-150%)		
QC1203432807 LCSD										
Kerosene	33300			29500	ug/Kg	6	89	(0%-20%)		11/16/15 11:47
**o-Terphenyl	666			562	ug/Kg		84	(50%-150%)		
QC1203432802 MB										
Diesel Range Organics			U	2160	ug/Kg					11/17/15 12:39
Kerosene			U	1110	ug/Kg					11/16/15 10:28
**o-Terphenyl	666			399	ug/Kg		60	(50%-150%)		11/17/15 12:39
QC1203432804 385355008 MS										
Diesel Range Organics	72700	U	2360	63900	ug/Kg		88	(70%-130%)		11/17/15 16:37
**o-Terphenyl	727		476	620	ug/Kg		85	(50%-150%)		
QC1203432805 385355008 MSD										
Diesel Range Organics	72700	U	2360	63300	ug/Kg	1	87	(0%-20%)		11/17/15 17:17
**o-Terphenyl	727		476	607	ug/Kg		83	(50%-150%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time

E Concentration exceeds the calibration range of the instrument

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated

N Spike Sample recovery is outside control limits.

P Aroclor target analyte with greater than 25% difference between column analyses.

T Spike and/or spike duplicate sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

GEL Laboratories LLC

Report Date: November 18 2015

FID Diesel Range Organics

Surrogate Recovery Report

SDG Number: GEL384871

Matrix Type: SOLID

Sample ID	Client ID	OTP %REC
1203432802	MB for batch 1523065	75
1203432806	LCS for batch 1523065	86
1203432807	LCSD for batch 1523065	84
384871003	B33BY1	80
384871004	B33BY5	78
1203432802	MB for batch 1523065RA	60
1203432803	LCS for batch 1523065	77
384871003	B33BY1RA	68
384871004	B33BY5RA	74
1203432804	B33M96RAMS	85
1203432805	B33M96RAMSD	83

Surrogate		Acceptance Limits
OTP	= o-Terphenyl	(50%-150%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

PCB Analysis

Case Narrative

GC Semivolatile PCB
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Procedure:	**Analysis of Polychlorinated Biphenyls by ECD**
Analytical Method:	SW846 3541/8082A
Prep Method:	SW846 3541
Analytical Batch Number:	1521415
Prep Batch Number:	1521414

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082A:

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
1203428570	Method Blank (MB)
1203428571	Laboratory Control Sample (LCS)
1203428576	384871003(B33BY1) Matrix Spike (MS)
1203428577	384871003(B33BY1) Matrix Spike Duplicate (MSD)

Samples 384871 003 and 004 in this SDG were analyzed on a "dry weight corrected" basis.

Preparation/Analytical Method Verification

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
Sample (See Below) failed to meet acceptance criteria for surrogate recovery. Since the the sample and the associated MS/MSD displayed similar surrogate recovery, the failure was attributed to sample matrix interference.

Sample	Analyte	Value
384871003 (B33BY1)	Decachlorobiphenyl	31* (32%-139%)

Laboratory Control Sample (LCS/LCSD) Recovery
The LCS/LCSD spike recoveries met the acceptance limits.

QC Sample Designation
Sample 384871003 (B33BY1) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS/MSD) Recovery Statement
The MS/MSD recoveries were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement
The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All samples and QC in this batch were cleaned using alumina in order to remove oil and other high molecular weight interferences. All samples and QC in this batch were cleaned with activated copper in order to remove sulfur. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns.

Sample Dilutions
The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
Data exception report (DER) 1465405 was generated for sample 384871003 (B33BY1) in this SDG/batch.

Manual Integrations
Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments
The column 1 has been chosen as the primary column. The data are reported from the column 1 for all samples in this batch.

Due to software issue, the surrogate recovery range was not indicated in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
ECD8A.I_1	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP I	30m x 0.25mm, 0.25um (Rtx-CLPesticide I)
ECD8A.I_2	Agilent 6890 Gas Chromatograph/Dual ECD w/ 7683 Autosampler	HP6890 Series ECD	Rtx-CLP II	30m x 0.25mm, 0.20um (Rtx-CLPesticide II)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Jimin Cao **Name: Jimin Cao**

Date: 16 NOV 2015 **Title: Data Validator**

Sample Data Summary

GEL Laboratories LLC

Report Date: November 12, 2015

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871003**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**2.6**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY1**	**Method:**	**SW846 3541/8082A**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1521415**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**11/10/2015 06:20**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/09/2015 11:26**	**Aliquot:**	**30.08 g**	**Final Volume:**	**1 mL**
Data File:	**111015.B\e8k1017.D**	**Column:**	**1 RTX-CLPEST1**		
	111015.B\e8k1017.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	1.14	ug/kg	1.14	3.41	1
11104-28-2	Aroclor-1221	U	1.14	ug/kg	1.14	3.41	1
11141-16-5	Aroclor-1232	U	1.14	ug/kg	1.14	3.41	1
53469-21-9	Aroclor-1242	U	1.14	ug/kg	1.14	3.41	1
12672-29-6	Aroclor-1248	U	1.14	ug/kg	1.14	3.41	1
11097-69-1	Aroclor-1254	U	1.14	ug/kg	1.14	3.41	1
11096-82-5	Aroclor-1260	U	1.14	ug/kg	1.14	3.41	1
37324-23-5	Aroclor-1262	U	1.14	ug/kg	1.14	3.41	1
11100-14-4	Aroclor-1268	U	1.14	ug/kg	1.14	3.41	1

GEL Laboratories LLC

Report Date: November 12, 2015

PCB
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
Lab Sample ID:	**384871004**	**Date Received:**	**11/05/2015 09:00**	**%Moisture:**	**.5**
		Client:	**CPRC001**	**Project:**	**CPRC0F15011**
Client ID:	**B33BY5**	**Method:**	**SW846 3541/8082A**	**SOP Ref:**	**GL-OA-E-040**
Batch ID:	**1521415**	**Inst:**	**ECD8A.I**	**Dilution:**	**1**
Run Date:	**11/10/2015 07:03**	**Analyst:**	**JXM**	**Inj. Vol:**	**1 uL**
Prep Date:	**11/09/2015 11:26**	**Aliquot:**	**30.03 g**	**Final Volume:**	**1 mL**
Data File:	**111015.B\e8k1020.D**	**Column:**	**1 RTX-CLPEST1**		
	111015.B\e8k1020.D		**2 RTX-CLPEST2**		

CAS No.	Parmname	Qualifier	Result	Units	MDL/LOD	PQL/LOQ	Column
12674-11-2	Aroclor-1016	U	1.11	ug/kg	1.11	3.35	1
11104-28-2	Aroclor-1221	U	1.11	ug/kg	1.11	3.35	1
11141-16-5	Aroclor-1232	U	1.11	ug/kg	1.11	3.35	1
53469-21-9	Aroclor-1242	U	1.11	ug/kg	1.11	3.35	1
12672-29-6	Aroclor-1248	U	1.11	ug/kg	1.11	3.35	1
11097-69-1	Aroclor-1254	U	1.11	ug/kg	1.11	3.35	1
11096-82-5	Aroclor-1260	U	1.11	ug/kg	1.11	3.35	1
37324-23-5	Aroclor-1262	U	1.11	ug/kg	1.11	3.35	1
11100-14-4	Aroclor-1268	U	1.11	ug/kg	1.11	3.35	1

Quality Control Summary

GEL Laboratories LLC

Report Date: November 12 2015

PCB

Surrogate Recovery Report

SDG Number: GEL384871

Matrix Type: SOLID

Sample ID	Client ID	4CMX 1 %REC #	4CMX 2 %REC #	DCB 1 %REC #	DCB 2 %REC #
1203428570	MB for batch 1521414	49	51	66	66
1203428571	LCS for batch 1521414	54	56	76	77
384871003	B33BY1	55	57	32	31 *
1203428576	B33BY1MS	58	60	39	39
1203428577	B33BY1MSD	57	59	36	36
384871004	B33BY5	68	70	38	36

Surrogate		Acceptance Limits
4CMX	= 4cmx	(30%-120%)
DCB	= Decachlorobiphenyl	(32%-139%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 12, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-PCB										
Batch 1521415										
QC1203428571 LCS										
Aroclor-1016	33.3			22.4	ug/kg		67	(48%-93%)	JXM	11/10/15 05:36
Aroclor-1260	33.3			25.4	ug/kg		76	(58%-117%)		
**4cmx	6.67			3.59	ug/kg		54	(30%-120%)		
**Decachlorobiphenyl	6.67			5.09	ug/kg		76	(32%-139%)		
QC1203428570 MB										
Aroclor-1016			U	1.11	ug/kg					11/10/15 05:24
Aroclor-1221			U	1.11	ug/kg					
Aroclor-1232			U	1.11	ug/kg					
Aroclor-1242			U	1.11	ug/kg					
Aroclor-1248			U	1.11	ug/kg					
Aroclor-1254			U	1.11	ug/kg					
Aroclor-1260			U	1.11	ug/kg					
Aroclor-1262			U	1.11	ug/kg					
Aroclor-1268			U	1.11	ug/kg					
**4cmx	6.67			3.27	ug/kg		49	(30%-120%)		
**Decachlorobiphenyl	6.67			4.42	ug/kg		66	(32%-139%)		
QC1203428576 384871003 MS										
Aroclor-1016	33.9	U	1.14	21.4	ug/kg		63	(23%-121%)		11/10/15 06:34
Aroclor-1260	33.9	U	1.14	19.3	ug/kg		57	(35%-135%)		
**4cmx	6.78		3.72	3.90	ug/kg		58	(30%-120%)		
**Decachlorobiphenyl	6.78		2.16	2.67	ug/kg		39	(32%-139%)		

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: **384871**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Semi-Volatiles-PCB											
Batch 1521415											
QC1203428577 384871003 MSD											
Aroclor-1016	33.7	U	1.14		20.1	ug/kg	6	60	(0%-29%)	JXM	11/10/15 06:49
Aroclor-1260	33.7	U	1.14		18.3	ug/kg	5	54	(0%-33%)		
**4cmx	6.73		3.72		3.85	ug/kg		57	(30%-120%)		
**Decachlorobiphenyl	6.73		2.16		2.44	ug/kg		36	(32%-139%)		

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
- N Spike Sample recovery is outside control limits.
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1465405
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
11-NOV-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
GC/ECD	SW846 3541/8082A	Solid	CPRC, UCOR
Batch ID:	**Sample Numbers:**		
1521415	See Below		

Potentially affected work order(s)(SDG): 384419,384454,384871(GEL384871),384982

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Failed Yield for Surrogates

Specification and Requirements Exception Description:	DER Disposition:
1. The MS or MSD did not meet spike recovery acceptance limits. 2. Sample 384871003 failed to meet acceptance criteria for surrogate recovery.	1. The MS or MSD (See Below) did not meet spike recovery acceptance limits due to dilution and sample matrix interference. 1203428574 (OS318-AMS) Aroclor-1016 [0* (23%-121%)], Aroclor-1260 [0* (35%-135%)]. 1203428575 (OS318-AMSD) Aroclor-1016 [0* (23%-121%)] and Aroclor-1260 [0* (35%-135%)]. 2. Sample (See Below) failed to meet acceptance criteria for surrogate recovery. Since the the sample and the associated MS/MSD displayed similar surrogate recovery, the failure was attributed to sample matrix interference. 384871003 (B33BY1) Decachlorobiphenyl [31* (32%-139%)].

Originator's Name:
James Maestas 11-NOV-15

Data Validator/Group Leader:
Jimin Cao 12-NOV-15

Metals Analysis

Case Narrative

Metals
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427477	Method Blank (MB)**ICP**
1203427478	Laboratory Control Sample (LCS)
1203427481	384871003(B33BY1L) Serial Dilution (SD)
1203427479	384871003(B33BY1D) Sample Duplicate (DUP)
1203427480	384871003(B33BY1S) Matrix Spike (MS)
1203427454	Method Blank (MB)**ICP-MS**
1203427455	Laboratory Control Sample (LCS)
1203427458	384871003(B33BY1L) Serial Dilution (SD)
1203427456	384871003(B33BY1D) Sample Duplicate (DUP)
1203427457	384871003(B33BY1S) Matrix Spike (MS)
1203432721	384871003(B33BY1PS) Post Spike (PS)
1203429923	Method Blank (MB)**CVAA**
1203429924	Laboratory Control Sample (LCS)
1203429931	384871003(B33BY1L) Serial Dilution (SD)
1203429929	384871003(B33BY1D) Sample Duplicate (DUP)
1203429930	384871003(B33BY1S) Matrix Spike (MS)

Sample Analysis

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.

Method/Analysis Information

Analytical Batch:	1521000, 1520992 and 1521936
Prep Batch :	1520999, 1520991 and 1521935
Standard Operating Procedures:	GL-MA-E-013 REV# 24, GL-MA-E-009 REV# 26, GL-MA-E-014 REV# 26 and GL-MA-E-010 REV# 31
Analytical Method:	6010_METALS_ICP, 6020_METALS_ICPMS and 7471_HG_CVAA
Prep Method :	SW846 3050B and SW846 7471B Prep

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

System Configuration

The Metals analysis-ICP was performed on a PE 7300 Optima radial/axial-viewing inductively coupled plasma atomic emission spectrometer. The instrument is equipped with an ESI SC-FAST introduction, cyclonic spray chamber, and yttrium or scandium internal standard.

The Metals analysis - ICPMS was performed on a Perkin Elmer ELAN 9000 inductively coupled plasma mass spectrometer (ICP-MS). The instrument is equipped with a cross-flow nebulizer, quadrupole mass spectrometer, and dual mode electron multiplier detector. Internal standards of scandium, germanium, indium, tantalum, and/or lutetium were utilized to cover the mass spectrum.

The Metals analysis-Mercury was performed on a Perkin-Elmer Flow Injection Mercury System (FIMS-100) automated mercury analyzer. The instrument consists of a cold vapor atomic absorption spectrometer set to detect mercury at a wavelength of 253.7 nm.

Calibration Information

Instrument Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

CRDL/PQL Requirements
The CRDL/PQL standard recoveries met the referenced advisory control limits.

ICSA/ICSAB Statement
All interference check samples (ICSA and ICSAB) associated with this SDG met the established acceptance criteria.

Continuing Calibration Blanks (CCB) Requirements
All continuing calibration blanks (CCB) bracketing this batch met the established acceptance criteria.

Continuing Calibration Verification (CCV) Requirements
All continuing calibration verifications (CCV) bracketing this SDG met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement
The method blanks (MB) analyzed with this SDG met the acceptance criteria. However,molybdenum and nickel was greater than the MDL. In instances where there were positive hits in the method blank, the results were evaluated and appropriately flagged on the data. 1203427454 (MB)-ICP-MS.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Quality Control (QC) Sample Statement
The following samples were selected as the quality control (QC) samples for this SDG: 384871003 (B33BY1)-ICP, ICP-MS and CVAA.

Matrix Spike (MS/MSD) Recovery Statement
The percent recoveries (%R) obtained from the MS/MSD analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits for some of the analyte. This verifies the absence of a matrix interference in the post-digested sample. For other analyte the post spike failed verifying the presence of a matrix interference in the post-digested sample. The failing spike recovery may be attributed to possible matrix interference and/or sample non-homogeneity.

Sample	Analyte	Value
1203427457 (B33BY1MS)	Beryllium	73.3* (75%-125%)
	Chromium	1.7* (75%-125%)
	Cobalt	72.9* (75%-125%)
	Molybdenum	47.1* (75%-125%)

Duplicate Relative Percent Difference (RPD) Statement
The RPD obtained from the designated sample duplicate (DUP) is evaluated based on acceptance criteria of 20% when the sample is >5X the contract required reporting limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control of +/-RL is used to evaluate the DUP results. Not all the applicable analyte RPD values were within the acceptance criteria.

Sample	Analyte	Value
1203427456 (B33BY1DUP)	Chromium	57.1* (0%-20%)
	Molybdenum	102* (0%-20%)
	Nickel	101* (0%-20%)
	Uranium	22.8* (0%-20%)

Serial Dilution % Difference Statement
The serial dilution is used to assess matrix suppression or enhancement. Raw element concentrations 25x the IDL/MDL for CVAA, 50X the IDL/MDL for ICP and 100X the IDL/MDL for ICP-MS analyses are applicable for serial dilution assessment. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified.

Sample	Analyte	Value
1203427458 (B33BY1SDILT)	Aluminum	11.6 *(0%-10%)
	Barium	13.9 *(0%-10%)
	Copper	11.6 *(0%-10%)
	Nickel	10.9 *(0%-10%)

Post Spike (PS) Recovery Statement
The percent recoveries (%R) obtained from the PS analyses are evaluated when the sample concentration is less than four times (4X) the spike concentration added. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences.

Sample	Analyte	Value
1203432721 (B33BY1PS)	Beryllium	68.6* (80%-120%)

Technical Information

Holding Time Specifications
GEL assigns holding times based on the associated methodology. Holding time is measured by comparison of

the date and time of sample collection to the date and time of sample preparation and analysis. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP. Method SW-846 3050B is not a total digestion technique for most samples. It is a very strong acid digestion that will dissolve almost all elements that could become environmentally available. By design, elements bound in silicate structures are not normally dissolved by this procedure as they are not usually mobile in the environment.

Sample Dilutions
Dilutions are performed to minimize matrix interferences resulting from elevated mineral element concentrations present in solid samples and/or to bring over range target analyte concentrations into the linear calibration range of the instrument. Samples required dilutions in order to minimize suppression due to matrix interferences for silver. Samples were diluted in order to bring raw values for titanium within the linear range of the instrument, and for the analytes interfered with, in order to ensure that the inter-element correction factors were valid for antimony. 384871003 (B33BY1), 384871005 (B33BX7) and 384871006 (B33BX4)-ICP. Samples 384871003 (B33BY1), 384871005 (B33BX7) and 384871006 (B33BX4)-ICP-MS were diluted to ensure that the analyte concentrations were within the linear calibration range of the instrument. The ICPMS solid samples in this SDG were diluted the standard two times. ICP-MS.

Analyte	384871			
	003	**004**	**005**	**006**
Several	40X 2X 10X 1X	2X 1X	40X 2X 10X 1X	40X 2X 10X 1X

Preparation Information
The samples in this SDG were not diluted and prepared according to the cited SOP.

Miscellaneous Information

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted:
Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation
A Data exception report (DER) was generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) 1468193 was generated for samples 1203427456 (B33BY1DUP), 1203427457 (B33BY1MS), 1203427458 (B33BY1SDILT) and 1203432721 (B33BY1PS) in this SDG/batch.

Additional Comments
Additional comments were not required for this SDG.

Special Preparation Directions
Non-applicable for this SDG.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

* Duplicate analysis not within control limits

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.

D Results are reported from a diluted aliquot of sample.

M Duplicate precision not met.

N Spike Sample recovery is outside control limits.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name:** **Jamie Johnson**

Date: **18 NOV 2015** **Title:** **Group Leader**

Sample Data Summary

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL384871 **METHOD TYPE:** SW846

SAMPLE ID: 384871003 **CLIENT ID:** B33BY1

CONTRACT: CPRC0F15011

MATRIX: SOIL **DATE RECEIVED** 05−NOV−15 **LEVEL:** Low **%SOLIDS:** 97.4

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7429−90−5	Aluminum	6260000	ug/kg	D	M	MS	2960	2	ICPMS5	151113−2
7440−36−0	Antimony	8810	ug/kg	BD		P	3360	10	OPTIMA5	110615−1
7440−38−2	Arsenic	2850	ug/kg	D		MS	197	2	ICPMS5	151116−3
7440−39−3	Barium	113000	ug/kg	D	M	MS	98.5	2	ICPMS5	151113−2
7440−41−7	Beryllium	196	ug/kg	D	N	MS	19.7	2	ICPMS5	151113−2
7440−43−9	Cadmium	554	ug/kg	D		MS	19.7	2	ICPMS5	151113−2
7440−47−3	Chromium	11600	ug/kg	D	*N	MS	197	2	ICPMS5	151113−2
7440−48−4	Cobalt	8600	ug/kg	D	N	MS	59.1	2	ICPMS5	151113−2
7440−50−8	Copper	16000	ug/kg	D	M	MS	65	2	ICPMS5	151113−2
7439−92−1	Lead	3240	ug/kg	D		MS	98.5	2	ICPMS5	151113−2
7439−96−5	Manganese	325000	ug/kg	D		MS	3940	40	ICPMS5	151116−5
7439−97−6	Mercury	6.12	ug/kg	B		AV	4.06	1	HG3	111115S1−6
7439−98−7	Molybdenum	3480	ug/kg	D	*N	MS	59.1	2	ICPMS5	151113−2
7440−02−0	Nickel	27100	ug/kg	D	*M	MS	98.5	2	ICPMS5	151113−2
7782−49−2	Selenium	325	ug/kg	UD		MS	325	2	ICPMS5	151116−3
7440−22−4	Silver	1020	ug/kg	UD		P	1020	10	OPTIMA5	110615−1
7440−61−1	Uranium	713	ug/kg	D	*	MS	13	2	ICPMS5	151113−2

***Analytical Methods:**

AV	**SW846 7471B**
P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**

GEL Laboratories LLC

METALS
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INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL384871 **METHOD TYPE:** SW846

SAMPLE ID: 384871004 **CLIENT ID:** B33BY5

CONTRACT: CPRC0F15011

MATRIX: SOIL **DATE RECEIVED** 05−NOV−15 **LEVEL:** Low **%SOLIDS:** 99.51

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7429−90−5	Aluminum	31300	ug/kg	D	M	MS	2920	2	ICPMS5	151113−2
7440−36−0	Antimony	1160	ug/kg			P	318	1	OPTIMA5	110615−1
7440−38−2	Arsenic	195	ug/kg	UD		MS	195	2	ICPMS5	151116−3
7440−39−3	Barium	206	ug/kg	BD	M	MS	97.4	2	ICPMS5	151113−2
7440−41−7	Beryllium	19.5	ug/kg	UD	N	MS	19.5	2	ICPMS5	151113−2
7440−43−9	Cadmium	19.5	ug/kg	UD		MS	19.5	2	ICPMS5	151113−2
7440−47−3	Chromium	195	ug/kg	UD	*N	MS	195	2	ICPMS5	151113−2
7440−48−4	Cobalt	58.4	ug/kg	UD	N	MS	58.4	2	ICPMS5	151113−2
7440−50−8	Copper	230	ug/kg	D	M	MS	64.3	2	ICPMS5	151113−2
7439−92−1	Lead	113	ug/kg	BD		MS	97.4	2	ICPMS5	151113−2
7439−96−5	Manganese	326	ug/kg	BD		MS	195	2	ICPMS5	151113−2
7439−97−6	Mercury	3.85	ug/kg	U		AV	3.85	1	HG3	111115S1−6
7439−98−7	Molybdenum	58.4	ug/kg	UD	*N	MS	58.4	2	ICPMS5	151113−2
7440−02−0	Nickel	97.4	ug/kg	UD	*M	MS	97.4	2	ICPMS5	151113−2
7782−49−2	Selenium	321	ug/kg	UD		MS	321	2	ICPMS5	151116−3
7440−22−4	Silver	96.3	ug/kg	U		P	96.3	1	OPTIMA5	110615−1
7440−61−1	Uranium	44.4	ug/kg	D	*	MS	12.9	2	ICPMS5	151113−2

***Analytical Methods:**

AV	**SW846 7471B**
P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL384871 **METHOD TYPE:** SW846

SAMPLE ID: 384871005 **CLIENT ID:** B33BX7

CONTRACT: CPRC0F15011

MATRIX: SOIL **DATE RECEIVED** 05−NOV−15 **LEVEL:** Low **%SOLIDS:** 95.9

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7429−90−5	Aluminum	6060000	ug/kg	D	M	MS	3090	2	ICPMS5	151113−2
7440−36−0	Antimony	9720	ug/kg	BD		P	3300	10	OPTIMA5	110615−1
7440−38−2	Arsenic	3510	ug/kg	D		MS	206	2	ICPMS5	151116−3
7440−39−3	Barium	77700	ug/kg	D	M	MS	103	2	ICPMS5	151113−2
7440−41−7	Beryllium	212	ug/kg	D	N	MS	20.6	2	ICPMS5	151113−2
7440−43−9	Cadmium	566	ug/kg	D		MS	20.6	2	ICPMS5	151113−2
7440−47−3	Chromium	6580	ug/kg	D	*N	MS	206	2	ICPMS5	151113−2
7440−48−4	Cobalt	7600	ug/kg	D	N	MS	61.7	2	ICPMS5	151113−2
7440−50−8	Copper	15700	ug/kg	D	M	MS	67.9	2	ICPMS5	151113−2
7439−92−1	Lead	4320	ug/kg	D		MS	103	2	ICPMS5	151113−2
7439−96−5	Manganese	343000	ug/kg	D		MS	4110	40	ICPMS5	151116−5
7439−97−6	Mercury	6.4	ug/kg	B		AV	3.57	1	HG3	111115S1−6
7439−98−7	Molybdenum	409	ug/kg	CD	*N	MS	61.7	2	ICPMS5	151113−2
7440−02−0	Nickel	8210	ug/kg	D	*M	MS	103	2	ICPMS5	151113−2
7782−49−2	Selenium	339	ug/kg	UD		MS	339	2	ICPMS5	151116−3
7440−22−4	Silver	1000	ug/kg	UD		P	1000	10	OPTIMA5	110615−1
7440−61−1	Uranium	684	ug/kg	D	*	MS	13.6	2	ICPMS5	151113−2

***Analytical Methods:**

AV	**SW846 7471B**
P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**

GEL Laboratories LLC

METALS
−1−
INORGANICS ANALYSIS DATA PACKAGE

SDG No: GEL384871 **METHOD TYPE:** SW846

SAMPLE ID: 384871006 **CLIENT ID:** B33BX4

CONTRACT: CPRC0F15011

MATRIX: SOIL **DATE RECEIVED** 05−NOV−15 **LEVEL:** Low **%SOLIDS:** 96.5

CAS No	Analyte	Result	Units	C	Qual	M*	MDL	DF	Inst ID	Analytical Run
7429−90−5	Aluminum	6210000	ug/kg	D	M	MS	3100	2	ICPMS5	151113−2
7440−36−0	Antimony	8510	ug/kg	BD		P	3410	10	OPTIMA5	110615−1
7440−38−2	Arsenic	2810	ug/kg	D		MS	206	2	ICPMS5	151116−3
7440−39−3	Barium	77200	ug/kg	D	M	MS	103	2	ICPMS5	151113−2
7440−41−7	Beryllium	189	ug/kg	D	N	MS	20.6	2	ICPMS5	151113−2
7440−43−9	Cadmium	512	ug/kg	D		MS	20.6	2	ICPMS5	151113−2
7440−47−3	Chromium	7840	ug/kg	D	*N	MS	206	2	ICPMS5	151113−2
7440−48−4	Cobalt	7320	ug/kg	D	N	MS	61.9	2	ICPMS5	151113−2
7440−50−8	Copper	15000	ug/kg	D	M	MS	68.1	2	ICPMS5	151113−2
7439−92−1	Lead	4530	ug/kg	D		MS	103	2	ICPMS5	151113−2
7439−96−5	Manganese	319000	ug/kg	D		MS	4130	40	ICPMS5	151116−5
7439−97−6	Mercury	5.66	ug/kg	B		AV	3.99	1	HG3	111115S1−6
7439−98−7	Molybdenum	585	ug/kg	CD	*N	MS	61.9	2	ICPMS5	151113−2
7440−02−0	Nickel	8290	ug/kg	D	*M	MS	103	2	ICPMS5	151113−2
7782−49−2	Selenium	341	ug/kg	UD		MS	341	2	ICPMS5	151116−3
7440−22−4	Silver	1030	ug/kg	UD		P	1030	10	OPTIMA5	110615−1
7440−61−1	Uranium	498	ug/kg	D	*	MS	13.6	2	ICPMS5	151113−2

***Analytical Methods:**

AV	**SW846 7471B**
P	**SW846 3050B/6010C**
MS	**SW846 3050B/6020A**

Quality Control Summary

GEL LABORATORIES LLC
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QC Summary

Report Date: November 18, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1520992										
QC1203427456 384871003 DUP										
Aluminum	DM	6260000	D	6690000	ug/kg	6.75		(0%-20%)	BCD1	11/14/15 04:36
Arsenic	D	2850	D	3620	ug/kg	23.6 ^		(+/-995)		11/16/15 15:07
Barium	DM	113000	D	95300	ug/kg	17.3		(0%-20%)		11/14/15 04:36
Beryllium	DN	196	D	184	ug/kg	6.11 ^		(+/-99.5)		
Cadmium	D	554	D	628	ug/kg	12.5 ^		(+/-199)		
Chromium	*DN	11600	*D	6440	ug/kg	57.1*		(0%-20%)		
Cobalt	DN	8600	D	8000	ug/kg	7.23		(0%-20%)		
Copper	DM	16000	D	15700	ug/kg	2.01		(0%-20%)		
Lead	D	3240	D	3560	ug/kg	9.52		(0%-20%)		
Manganese	D	325000	D	354000	ug/kg	8.53		(0%-20%)		11/16/15 20:16
Molybdenum	*DN	3480	*D	1120	ug/kg	102*		(0%-20%)		11/14/15 04:36
Nickel	*DM	27100	*D	8880	ug/kg	101*		(0%-20%)		
Selenium	DU	ND	DU	ND	ug/kg	N/A				11/16/15 15:07
Uranium	*D	713	*D	897	ug/kg	22.8*		(0%-20%)		11/14/15 04:36
QC1203427455 LCS										
Aluminum	196000		D	197000	ug/kg		100	(80%-120%)		11/14/15 04:03
Arsenic	4910		D	5150	ug/kg		105	(80%-120%)		11/16/15 14:59
Barium	4910		D	5150	ug/kg		105	(80%-120%)		11/14/15 04:03
Beryllium	4910		D	4570	ug/kg		92.9	(80%-120%)		
Cadmium	4910		D	4690	ug/kg		95.5	(80%-120%)		

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QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1520992										
Chromium	4910		D	5110	ug/kg		104	(80%-120%)		
Cobalt	4910		D	5030	ug/kg		102	(80%-120%)	BCD1	11/14/15 04:03
Copper	4910		D	5030	ug/kg		102	(80%-120%)		
Lead	4910		D	5170	ug/kg		105	(80%-120%)		
Manganese	4910		D	5070	ug/kg		103	(80%-120%)		11/16/15 19:27
Molybdenum	4910		D	5030	ug/kg		102	(80%-120%)		11/14/15 04:03
Nickel	4910		D	5020	ug/kg		102	(80%-120%)		
Selenium	4910		D	4680	ug/kg		95.3	(80%-120%)		11/16/15 14:59
Uranium	4910		D	5310	ug/kg		108	(34%-166%)		11/14/15 04:03
QC1203427454 MB										
Aluminum			DU	ND	ug/kg					11/14/15 03:56
Arsenic			DU	ND	ug/kg					11/16/15 14:55
Barium			DU	ND	ug/kg					11/14/15 03:56
Beryllium			DU	ND	ug/kg					
Cadmium			DU	ND	ug/kg					
Chromium			DU	ND	ug/kg					
Cobalt			DU	ND	ug/kg					
Copper			DU	ND	ug/kg					
Lead			DU	ND	ug/kg					
Manganese			DU	ND	ug/kg					11/16/15 19:24
Molybdenum			BD	84.7	ug/kg					11/14/15 03:56
Nickel			BD	105	ug/kg					
Selenium			DU	ND	ug/kg					11/16/15 14:55

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QC Summary

Workorder: **384871**

Parmname	NOM		Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS											
Batch 1520992											
Uranium				DU	ND	ug/kg				BCD1	11/14/15 03:56
QC1203427457 384871003 MS											
Aluminum	204000	DM	6260000	D	6240000	ug/kg		N/A	(75%-125%)		11/14/15 04:43
Arsenic	5100	D	2850	D	7970	ug/kg		100	(75%-125%)		11/16/15 15:11
Barium	5100	DM	113000	D	95000	ug/kg		N/A	(75%-125%)		11/14/15 04:43
Beryllium	5100	DN	196	DN	3940	ug/kg		73.3 *	(75%-125%)		
Cadmium	5100	D	554	D	5270	ug/kg		92.4	(75%-125%)		
Chromium	5100	*DN	11600	DN	11700	ug/kg		1.7 *	(75%-125%)		
Cobalt	5100	DN	8600	DN	12300	ug/kg		72.9 *	(75%-125%)		
Copper	5100	DM	16000	D	20100	ug/kg		80.8	(75%-125%)		
Lead	5100	D	3240	D	8250	ug/kg		98.1	(75%-125%)		
Manganese	5100	D	325000	D	327000	ug/kg		N/A	(75%-125%)		11/16/15 20:19
Molybdenum	5100	*DN	3480	DN	5880	ug/kg		47.1 *	(75%-125%)		11/14/15 04:43
Nickel	5100	*DM	27100	D	12900	ug/kg		N/A	(75%-125%)		
Selenium	5100	DU	ND	D	4320	ug/kg		84.7	(75%-125%)		11/16/15 15:11
Uranium	5100	*D	713	D	6210	ug/kg		108	(75%-125%)		11/14/15 04:43
QC1203432721 384871003 PS											
Beryllium	25.0	DN	0.995	D	18.2	ug/L		68.6 *	(80%-120%)		11/14/15 04:49
Chromium	25.0	*DN	58.8	D	79.7	ug/L		83.4	(80%-120%)		
Cobalt	25.0	DN	43.6	D	64.9	ug/L		84.9	(80%-120%)		
Molybdenum	25.0	*DN	17.6	D	41.8	ug/L		96.6	(80%-120%)		
QC1203427458 384871003 SDILT											
Aluminum		DM	31800	DM	7090	ug/L	11.6 *		(0%-10%)		11/14/15 04:56

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis - ICPMS										
Batch 1520992										
Arsenic	D	14.5	D	3.31	ug/L	14.3		(0%-10%)		11/16/15 15:19
Barium	DM	575	DM	131	ug/L	13.9*		(0%-10%)	BCD1	11/14/15 04:56
Beryllium	DN	0.995	D	0.251	ug/L	26.1		(0%-10%)		
Cadmium	D	2.81	D	0.579	ug/L	2.99		(0%-10%)		
Chromium	*DN	58.8	D	13.4	ug/L	13.7		(0%-10%)		
Cobalt	DN	43.6	D	9.31	ug/L	6.7		(0%-10%)		
Copper	DM	81.0	DM	18.1	ug/L	11.6*		(0%-10%)		
Lead	D	16.4	D	3.43	ug/L	4.3		(0%-10%)		
Manganese	D	82.4	D	16.8	ug/L	1.7		(0%-10%)		11/16/15 20:26
Molybdenum	*DN	17.6	D	3.55	ug/L	.743		(0%-10%)		11/14/15 04:56
Nickel	*DM	137	DM	30.5	ug/L	10.9*		(0%-10%)		
Selenium	DU	ND	DU	ND	ug/L	N/A		(0%-10%)		11/16/15 15:19
Uranium	*D	3.62	D	0.736	ug/L	1.69		(0%-10%)		11/14/15 04:56
Metals Analysis-ICP										
Batch 1521000										
QC1203427479 384871003 DUP										
Antimony	BD	8810	D	11100	ug/kg	22.6 ^		(+/-10300)	JWJ	11/06/15 20:13
Silver	DU	ND	DU	ND	ug/kg	N/A				
QC1203427478 LCS										
Antimony	49700			50400	ug/kg		101	(80%-120%)		11/06/15 19:31
Silver	49700			49900	ug/kg		100	(80%-120%)		
QC1203427477 MB										
Antimony			U	ND	ug/kg					11/06/15 19:28
Silver			U	ND	ug/kg					
QC1203427480 384871003 MS										
Antimony	50800	BD	8810	D	60300	ug/kg		101	(75%-125%)	11/06/15 20:17

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QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date Time
Metals Analysis-ICP										
Batch 1521000										
Silver	50800 DU	ND	D	50700	ug/kg		99.7	(75%-125%)	JWJ	11/06/15 20:17
QC1203427481 384871003 SDILT										
Antimony	BD	8.65	D	4.21	ug/L	143		(0%-10%)		11/06/15 20:24
Silver	DU	ND	DU	ND	ug/L	N/A		(0%-10%)		
Metals Analysis-Mercury										
Batch 1521936										
QC1203429929 384871003 DUP										
Mercury	B	6.12	B	6.42	ug/kg	4.67 ^		(+/-12.2)	MTM1	11/11/15 08:56
QC1203429924 LCS										
Mercury	10400		D	9490	ug/kg		91.2	(80%-120%)		11/11/15 10:24
QC1203429923 MB										
Mercury			U	ND	ug/kg					11/11/15 08:16
QC1203429930 384871003 MS										
Mercury	122 B	6.12		128	ug/kg		99.5	(80%-120%)		11/11/15 08:57
QC1203429931 384871003 SDILT										
Mercury	B	0.101	D	0.069	ug/L	242		(0%-10%)		11/11/15 08:59

Notes:

The Qualifiers in this report are defined as follows:

- * Duplicate analysis not within control limits
- \+ Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- E Reported value is estimated due to interferences. See comment in narrative.
- M Duplicate precision not met.
- N Spike Sample recovery is outside control limits.
- S Reported value determined by the Method of Standard Additions (MSA)
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

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QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD/D%	REC%	Range	Anlst	Date	Time

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1468289
Revision No.: 1

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
18-NOV-15	Industrial	Specifications	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ICP/MS	SW846 3050B/6020A	Solid	CPRC
Batch ID:	**Sample Numbers:**		
1520992	See Below		

Potentially affected work order(s)(SDG): 384871(GEL384871)

Application Issues:

Failed Recovery for MS/MSD, or PS/PSD

Failed RPD for DUP

Failed Recovery for PS/PSD

Failed difference for SDILT

Specification and Requirements Exception Description:	DER Disposition:
1. Failed RPD for DUP: QC 1203427456DUP 2. Failed Recovery for MS/MSD, or PS/PSD: QC 1203427457MS 3. Failed Recovery for PS/PSD: QC 1203432721PS 4. Failed difference for SDILT: QC 1203427458SDILT	1. Not all the applicable analyte RPD values were within the acceptance criteria. 1203427456 (B33BY1DUP) Chromium [57.1* (0%-20%)], Molybdenum [102* (0%-20%)], Nickel [101* (0%-20%)] and Uranium [22.8* (0%-20%)]. 2. The MS/MSD (See Below) did not meet the recommended quality control acceptance criteria for percent recoveries for the following applicable analyte. The post spike recovery was within the required control limits for some of the analyte. This verifies the absence of a matrix interference in the post-digested sample. For other analyte the post spike failed verifying the presence of a matrix interference in the post-digested sample. The failing spike recovery may be attributed to possible matrix interference and/or sample non-homogeneity. 1203427457 (B33BY1MS) Beryllium [73.3* (75%-125%)], Chromium [1.7* (75%-125%)], Cobalt [72.9* (75%-125%)] and Molybdenum [47.1* (75%-125%)]. 3. The PS did not meet the recommended quality control acceptance criteria for percent recoveries for all applicable analytes and verifies the presence of matrix interferences. 1203432721 (B33BY1PS) Beryllium [68.6* (80%-120%)]. 4. Not all the applicable analytes were within the established acceptance criteria. Matrix suppression may be suspected. The data has been qualified. 1203427458 (B33BY1SDILT) Aluminum [11.6 *(0%-10%)], Barium [13.9 *(0%-10%)], Copper [11.6 *(0%-10%)] and Nickel [10.9 *(0%-10%)].

Originator's Name:

Samantha Jacobs 18-NOV-15

Data Validator/Group Leader:

Elizabeth Janssen 18-NOV-15

General Chem Analysis

Case Narrative

General Chemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Product:	**Cyanide and Total**		
Analytical Batch:	1521621	**Method:**	9010_CYANIDE: COMMON
Prep Batch :	1521620	**Method:**	SW846 9010C Distillation

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9012B:

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203429131	Method Blank (MB)
1203429132	Laboratory Control Sample (LCS)
1203429133	384871003(B33BY1) Sample Duplicate (DUP)
1203429134	384871003(B33BY1) Matrix Spike (MS)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-095 REV# 17.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Flow Injection analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration
All initial calibration requirements have been met for this SDG.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample 384871003 (B33BY1) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The following sample was diluted because target analyte concentrations exceeded the calibration range.
1203429132 (LCS).
Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments

Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Ion Chromatography**		
Analytical Batch:	1521060	**Method:**	9056_ANIONS_IC:COMMON + (Add-on)
Prep Batch :	1521059	**Method:**	SW846 9056A

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 9056A:

Sample ID	Client ID
384871007	B33BY2
384871008	B33BY6
384871009	B33BX5
384871010	B33BX8
1203427632	Method Blank (MB)
1203427633	Laboratory Control Sample (LCS)
1203427634	384871007(B33BY2) Sample Duplicate (DUP)
1203427635	384871007(B33BY2) Matrix Spike (MS)

Samples 384871 007, 008, 009 and 010 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-086 REV# 24.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Ion Chromatography analysis was performed on a Dionex ICS-1600 Ion Chromatograph.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample 384871007 (B33BY2) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation

Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integrations
Samples 1203427634 (B33BY2DUP), 384871007 (B33BY2), 384871008 (B33BY6), 384871009 (B33BX5) and 384871010 (B33BX8) were manually integrated to correctly position the baseline as set in the calibration standards.

Additional Comments
Additional comments were not required for this SDG.

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Ammonia Nitrogen**		
Analytical Batch:	1521799	**Method:**	350.1_AMMONIA: COMMON
Prep Batch :	1521797	**Method:**	EPA 350.2 Modified Prep

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA 350.1 Modified:

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
1203429550	Method Blank (MB)
1203429551	Laboratory Control Sample (LCS)
1203429552	384871003(B33BY1) Sample Duplicate (DUP)
1203429553	384871003(B33BY1) Matrix Spike (MS)

Samples 384871 003 and 004 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-106 REV# 9.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Nutrient analysis was performed on a Lachat QuickChem FIA+ 8000 Series.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Calibration Verification Information

All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Continuing Calibration Blanks
All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample 384871003 (B33BY1) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recovery for this sample set was within the required acceptance limits where applicable.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Preservation/Integrity
All the samples from this sample group met the preservation and integrity requirements of the method.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
Sample1203429551 (LCS) was re-analyzed to verify the result.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
The MS was accidentally double spiked at the prep step. 1203429553 (B33BY1MS).

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Method/Analysis Information

Product:	**Hexavalent Chromium**		
Analytical Batch:	1521967	**Method:**	7196_CR6: COMMON
Prep Batch :	1521964	**Method:**	SW846 3060A

Sample Analysis

The following samples were analyzed using the analytical protocol as established in 7196_CR6 :

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
1203430004	Method Blank (MB)
1203430005	Laboratory Control Sample (LCS)
1203430007	384742003(B33BW5) Sample Duplicate (DUP)
1203430009	384742003(B33BW5) Matrix Spike (MS)
1203430013	384742003(B33BW5) Matrix Spike Duplicate (MSD)
1203430006	Insoluble Lab Control Sample (ILCS)

Samples 384871 003 and 004 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-GC-E-044 REV# 21.

Preparation/Analytical Method Verification

The SOP stated above has been prepared based on technical research and testing conducted by GEL Laboratories, LLC. and with guidance from the regulatory documents listed in this "Method/Analysis Information" section.

Calibration Information

The Spectrometric analysis was performed on a Spectronic 20D+ Digital Spectrophotometer.

Initial Calibration

All initial calibration requirements have been met for this SDG.

Continuing Calibration Blanks

All continuing calibration blanks (CCBs) associated with reported data from this batch were within acceptance limits.

Calibration Verification Information (CCV)
All continuing calibration verification standards (CCVs) associated with reported data from this batch were within acceptance limits.

Y Intercept Rule
The absolute value of the intercept is less than 3 times the MDL.

Quality Control (QC) Information

Method Blank (MB) Statement
The MB analyzed with this SDG met the acceptance criteria.

Laboratory Control Sample (LCS) Recovery
The LCS spike recovery met the acceptance limits.

Quality Control (QC) Designation
Sample 384742003 (B33BW5) was selected for QC analysis.

Matrix Spike (MS)/Post Spike (PS) Recovery Statement
The MS/PS recoveries for this sample set were within the required acceptance limits where applicable.

MS/MSD Relative Percent Difference (RPD) Statement
The RPDs between the spike and spike duplicate met the acceptance limits.

Duplicate Relative Percent Difference (RPD) Statement
The RPD between the sample and its duplicate met the acceptance limits.

Technical Information

GEL assigns holding times based on the date and time of sample collection. Those holding times expressed in hours are calculated in the AlphaLims system by hours. Those holding times expressed as days expire at midnight on the day of expiration.

Holding Times
All samples in this SDG met the specified holding time.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-analysis
The samples in this SDG did not require re-analysis.

Miscellaneous Information

Data Exception (DER) Documentation
Data exception reports (DERs) are generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Additional comments were not required for this SDG.

Additional Comments
Non-applicable

Electronic Packaging Comment
This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

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Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).

D Results are reported from a diluted aliquot of sample.

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature:  **Name: Thomas Lewis**

Date: 17 NOV 2015 **Title: Data Validator**

Sample Data Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 17, 2015

Company : CH2MHill Plateau Remediation Company
Address : MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald
Project: CHPRC SAF F15-011

Client Sample ID: B33BY1
Sample ID: 384871003
Matrix: SOIL
Collect Date: 04-NOV-15 09:05
Receive Date: 05-NOV-15
Collector: Client
Moisture: 2.61%

Project: CPRC0F15011
Client ID: CPRC001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis											
9010_CYANIDE: COMMON "Dry Weight Corrected"											
Cyanide, Total	U	73.9	73.9	221	ug/kg	1	AXH3	11/11/15	1419	1521621	1
Nutrient Analysis											
350.1_AMMONIA: COMMON "Dry Weight Corrected"											
Nitrogen, Ammonia		9330	793	2330	ug/Kg	1	KLP1	11/10/15	1641	1521799	2
Spectrometric Analysis											
7196_CR6: COMMON "Dry Weight Corrected"											
Hexavalent Chromium		819	123	409	ug/Kg	1	SXC5	11/13/15	1544	1521967	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Modified Prep	EPA 350.1 Mod. Ammonia Nitrogen Prep	KLP1	11/10/15	1434	1521797
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	SXC5	11/11/15	1302	1521964
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/11/15	1020	1521620

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9012B	
2	EPA 350.1 Modified	
3	7196_CR6	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BY5	Project:	CPRC0F15011
Sample ID:	384871004	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 08:00		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	.493%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis											
9010_CYANIDE: COMMON "Dry Weight Corrected"											
Cyanide, Total	U	82.3	82.3	246	ug/kg	1	AXH3	11/11/15	1426	1521621	1
Nutrient Analysis											
350.1_AMMONIA: COMMON "Dry Weight Corrected"											
Nitrogen, Ammonia	B	1610	577	1700	ug/Kg	1	KLP1	11/10/15	1644	1521799	2
Spectrometric Analysis											
7196_CR6: COMMON "Dry Weight Corrected"											
Hexavalent Chromium		503	120	399	ug/Kg	1	SXC5	11/13/15	1544	1521967	3

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
EPA 350.2 Modified Prep	EPA 350.1 Mod. Ammonia Nitrogen Prep	KLP1	11/10/15	1434	1521797
SW846 3060A	SW846_7196A Hexavalent Chromium in Soil	SXC5	11/11/15	1302	1521964
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/11/15	1020	1521620

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9012B	
2	EPA 350.1 Modified	
3	7196_CR6	

Notes:

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Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BX7	Project:	CPRC0F15011
Sample ID:	384871005	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 08:20		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	4.11%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis											
9010_CYANIDE: COMMON "Dry Weight Corrected"											
Cyanide, Total	U	73.8	73.8	221	ug/kg	1	AXH3	11/11/15	1427	1521621	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/11/15	1020	1521620

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9012B	

Notes:

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Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BX4	Project:	CPRC0F15011
Sample ID:	384871006	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 07:50		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	3.47%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Flow Injection Analysis											
9010_CYANIDE: COMMON "Dry Weight Corrected"											
Cyanide, Total	U	78.6	78.6	235	ug/kg	1	AXH3	11/11/15	1428	1521621	1

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9010C Distillation	SW846 9010C Prep	AXH3	11/11/15	1020	1521620

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9012B	

Notes:

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Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BY2	Project:	CPRC0F15011
Sample ID:	384871007	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 09:05		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	2.32%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride		2510	686	2050	ug/Kg	1	MXL2	11/07/15	0320	1521060	1
Fluoride		2050	338	1020	ug/Kg	1					
Nitrate-N	B	720	338	1020	ug/Kg	1					
Nitrite-N	U	338	338	1020	ug/Kg	1					
Phosphorus in phosphate	B	1120	686	2050	ug/Kg	1					
Sulfate		190000	1360	4100	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/05/15	1630	1521059

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	

Notes:

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Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BY6	Project:	CPRC0F15011
Sample ID:	384871008	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 08:00		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	<0.1%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride	B	1190	665	1990	ug/Kg	1	MXL2	11/07/15	0459	1521060	1
Fluoride	U	328	328	993	ug/Kg	1					
Nitrate-N	U	328	328	993	ug/Kg	1					
Nitrite-N	U	328	328	993	ug/Kg	1					
Phosphorus in phosphate	U	665	665	1990	ug/Kg	1					
Sulfate	U	1320	1320	3970	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/05/15	1630	1521059

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	

Notes:

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Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BX5	Project:	CPRC0F15011
Sample ID:	384871009	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 07:50		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	3.51%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride		2380	689	2060	ug/Kg	1	MXL2	11/07/15	0532	1521060	1
Fluoride		1510	339	1030	ug/Kg	1					
Nitrate-N		4920	339	1030	ug/Kg	1					
Nitrite-N	U	339	339	1030	ug/Kg	1					
Phosphorus in phosphate	B	1160	689	2060	ug/Kg	1					
Sulfate		15100	1370	4110	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/05/15	1630	1521059

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	

Notes:

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: November 17, 2015

Company :	CH2MHill Plateau Remediation Company
Address :	MSIN R3-50 CHPRC PO Box 1600 Richland, Washington 99352
Contact:	Mr. Scot Fitzgerald
Project:	CHPRC SAF F15-011

Client Sample ID:	B33BX8	Project:	CPRC0F15011
Sample ID:	384871010	Client ID:	CPRC001
Matrix:	SOIL		
Collect Date:	04-NOV-15 08:20		
Receive Date:	05-NOV-15		
Collector:	Client		
Moisture:	4.47%		

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Ion Chromatography											
9056_ANIONS_IC:COMMON + (Add-on) "Dry Weight Corrected"											
Chloride	B	1520	693	2070	ug/Kg	1	MXL2	11/07/15	0605	1521060	1
Fluoride		2420	341	1030	ug/Kg	1					
Nitrate-N		2240	341	1030	ug/Kg	1					
Nitrite-N	U	341	341	1030	ug/Kg	1					
Phosphorus in phosphate	B	1170	693	2070	ug/Kg	1					
Sulfate		14500	1380	4140	ug/Kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 9056A	SW846 9056A Total Anions in Soil	MXL2	11/05/15	1630	1521059

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 9056A	

Notes:

Quality Control Summary

GEL LABORATORIES LLC
2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: November 17, 2015

CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington
Contact: **Mr. Scot Fitzgerald**

Workorder: **384871**

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Flow Injection Analysis											
Batch 1521621											
QC1203429133 384871003 DUP											
Cyanide, Total		U	73.9	U	76.5	ug/kg	N/A			AXH3	11/11/15 14:24
QC1203429132 LCS											
Cyanide, Total	90600			D	75300	ug/kg		83.1	(64%-149%)		11/11/15 14:18
QC1203429131 MB											
Cyanide, Total				U	83.5	ug/kg					11/11/15 14:17
QC1203429134 384871003 MS											
Cyanide, Total	5030	U	73.9		5690	ug/kg		113	(47%-133%)		11/11/15 14:25
Ion Chromatography											
Batch 1521060											
QC1203427634 384871007 DUP											
Chloride			2510		2500	ug/Kg	0.372 ^		(+/-2040)	MXL2	11/07/15 03:53
Fluoride			2050		2010	ug/Kg	2.37 ^		(+/-1020)		
Nitrate-N		B	720	B	715	ug/Kg	0.677 ^		(+/-1020)		
Nitrite-N		U	338	U	337	ug/Kg	N/A				
Phosphorus in phosphate		B	1120	B	1030	ug/Kg	8.82 ^		(+/-2040)		
Sulfate			190000		190000	ug/Kg	0.193		(0%-30%)		
QC1203427633 LCS											
Chloride	49900				49400	ug/Kg		99	(70%-130%)		11/07/15 02:48
Fluoride	24900				24900	ug/Kg		99.8	(70%-130%)		
Nitrate-N	24900				24600	ug/Kg		98.7	(70%-130%)		
Nitrite-N	24900				25700	ug/Kg		103	(70%-130%)		
Phosphorus in phosphate	12500				13400	ug/Kg		107	(70%-130%)		
Sulfate	99800				100000	ug/Kg		100	(70%-130%)		
QC1203427632 MB											

GEL LABORATORIES LLC
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QC Summary

Workorder: 384871

Parmname	NOM		Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Ion Chromatography											
Batch 1521060											
Chloride				U	670	ug/Kg					11/07/15 02:15
Fluoride				U	330	ug/Kg				MXL2	
Nitrate-N				U	330	ug/Kg					
Nitrite-N				U	330	ug/Kg					
Phosphorus in phosphate				U	670	ug/Kg					
Sulfate				U	1330	ug/Kg					
QC1203427635 384871007 MS											
Chloride	50700		2510		53700	ug/Kg		101	(48%-145%)		11/07/15 04:26
Fluoride	25300		2050		27500	ug/Kg		101	(30%-135%)		
Nitrate-N	25300	B	720		26400	ug/Kg		101	(70%-125%)		
Nitrite-N	25300	U	338		27300	ug/Kg		108	(70%-120%)		
Phosphorus in phosphate	12700	B	1120		11100	ug/Kg		79	(35%-134%)		
Sulfate	101000		190000		312000	ug/Kg		121	(45%-162%)		
Nutrient Analysis											
Batch 1521799											
QC1203429552 384871003 DUP											
Nitrogen, Ammonia			9330		9670	ug/Kg	3.55 ^		(+/-2290)	KLP1	11/10/15 16:42
QC1203429551 LCS											
Nitrogen, Ammonia	50000				54000	ug/Kg		108	(90%-110%)		11/10/15 16:51
QC1203429550 MB											
Nitrogen, Ammonia				U	850	ug/Kg					11/10/15 16:39
QC1203429553 384871003 MS											
Nitrogen, Ammonia	80200		9330		89800	ug/Kg		100	(90%-110%)		11/10/15 16:43
Spectrometric Analysis											
Batch 1521967											
QC1203430007 384742003 DUP											
Hexavalent Chromium			479		429	ug/Kg	11 ^		(+/-423)	SXC5	11/13/15 15:41
QC1203430006 ILCS											
Hexavalent Chromium	7960				9370	ug/Kg		118	(80%-120%)		11/13/15 15:36

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QC Summary

Workorder: **384871**

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date Time
Spectrometric Analysis										
Batch 1521967										
QC1203430005 LCS										
Hexavalent Chromium	3960			3790	ug/Kg		95.5	(80%-120%)	SXC5	11/13/15 15:36
QC1203430004 MB										
Hexavalent Chromium			U	120	ug/Kg					11/13/15 15:35
QC1203430009 384742003 MS										
Hexavalent Chromium	4230	479		3780	ug/Kg		78	(75%-125%)		11/13/15 15:42
QC1203430013 384742003 MSD										
Hexavalent Chromium	4210	479		3810	ug/Kg	0.847	79.2	(0%-30%)		11/13/15 15:43

Notes:

The Qualifiers in this report are defined as follows:

- < Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
- > Result greater than quantifiable range or greater than upper limit of the analysis range
- B The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
- C Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
- D Results are reported from a diluted aliquot of sample.
- N Spike Sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
* Indicates that a Quality Control parameter was not within specifications.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Radiological Analysis

Radiochemistry
Technical Case Narrative
CH2MHill Plateau Remediation Company (CPRC)
SDG #: GEL384871
Work Order #: 384871

Method/Analysis Information

Product:	**AMCMISO_EIE_PRECIP_AEA: COMMON**
Analytical Method:	AMCMISO_EIE_PREC_AEA
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521174
Prep Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427939	Method Blank (MB)
1203427941	Laboratory Control Sample (LCS)
1203427940	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 25.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

QC Information
All of the QC samples met the required acceptance limits.

Designated QC
The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**NP237_IE_PRECIP_AEA: COMMON**
Analytical Method:	ASTM C 1476-00 Modified
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521175
Prep Batch Number:	1521093

Sample ID	Client ID

384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427942	Method Blank (MB)
1203427944	Laboratory Control Sample (LCS)
1203427943	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-032 REV# 20.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples met the required acceptance limits.

Designated QC

The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**PUISO_PRECIP_AEA:COMMON**
Analytical Method:	PUISO_PLATE_AEA
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521176
Prep Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427945	Method Blank (MB)
1203427947	Laboratory Control Sample (LCS)
1203427946	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 25.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volumes in this batch.

QC Information
All of the QC samples met the required acceptance limits.

Designated QC
The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
Samples 1203427945 (MB), 384871003 (B33BY1) and 384871006 (B33BX4) were recounted due to a suspected false positive. The recounts are reported.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Manual Integration
No manual integrations were performed on data in this batch.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**UISO_IE_PRECIP_AEA:COMMON**
Analytical Method:	UISO_IE_PRECIP_AEA
Prep Method:	Dry Soil Prep

Analytical Batch Number: 1521177

Prep Batch Number: 1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427948	Method Blank (MB)
1203427950	Laboratory Control Sample (LCS)
1203427949	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-011 REV# 25.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples met the required acceptance limits.

Designated QC

The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
A data exception report (DER) 1466953 was generated for sample 384871004 (B33BY5) in this SDG/batch. DER 1466953 was generated due to Other. Sample 384871004 does not meet the resolution requirement of having a full width half maximum of 100 keV or less for the U-232 tracer. The sample does meet the tracer yield requirement, the detection limits, and its tracer peak is within the U-232 region of interest. Reporting results.

Manual Integration
No manual integrations were performed on data in this batch.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**Dry Weight-Percent Moisture**
Analytical Method:	Dry Soil Prep
Analytical Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427711	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on an "as received" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 10 and GL-RAD-A-021 REV# 20.

Calibration Information:

Quality Control (QC) Information:

Designated QC
The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Sample 384381004 is a trip blank and was prepped without sieving per PM instructions. 384871004 (B33BY5).

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Procedure:	**Dry Weight-Percent Moisture**
Analytical Method:	ASTM D 2216 (Modified)
Analytical Batch Number:	1521097

Sample ID	Client ID
384871001	B33BX1
384871002	B33BW4
384871007	B33BY2
384871008	B33BY6
384871009	B33BX5
384871010	B33BX8
1203427714	384871007(B33BY2) Sample Duplicate (DUP)

Samples 384871 001, 002, 007, 008, 009 and 010 in this SDG were analyzed on an "as received" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-020 REV# 10.

Calibration Information:

Quality Control (QC) Information:

Designated QC
The following sample was used for QC: 384871007 (B33BY2).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Additional Comments
Sample 384871001 gained weight while drying in the oven. 384871001 (B33BX1).

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**GAMMA_GS:COMMON**
Analytical Method:	GAMMA_GS
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521145
Prep Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203427841	Method Blank (MB)
1203427843	Laboratory Control Sample (LCS)
1203427842	384871004(B33BY5) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-013 REV# 25.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

QC Information
All of the QC samples met the required acceptance limits.

Designated QC
The following sample was used for QC: 384871004 (B33BY5).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Qualifier	Reason	Analyte	Sample	Client Sample
X	Data rejected due to interference.	Europium-155	384871003	B33BY1

Method/Analysis Information

Product:	**I129_SEP_LEPS_GS: COMMON**
Analytical Method:	DOE EML HASL-300,I-01 Modified
Analytical Batch Number:	1521171

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
1203427932	Method Blank (MB)
1203427935	Laboratory Control Sample (LCS)
1203427933	384742003(B33BW5) Sample Duplicate (DUP)
1203427934	384742003(B33BW5) Matrix Spike (MS)

Samples 384871 003 and 004 in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-006 REV# 21.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples met the required acceptance limits.

Designated QC

The following sample was used for QC: 384742003 (B33BW5).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**SRTOT_SEP_PRECIP_GPC: COMMON**
Analytical Method:	SRTOT_SEP_PRECIP_GPC
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521277
Prep Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203428206	Method Blank (MB)
1203428208	Laboratory Control Sample (LCS)
1203428207	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-004 REV# 17.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

QC Information
All of the QC samples meet the required acceptance limits with the following exceptions: The sample and duplicate, 1203428207 (B33BY1DUP) and 384871003 (B33BY1), do not meet the client relative error ratio requirement; however, both sample and duplicate results are less than the minimum detectable activity.

Designated QC
The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Chemical Recoveries
All chemical recoveries meet the required acceptance limits for this sample set.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product: **TC99_EIE_LSC: COMMON**

Analytical Method: TC99_EIE_LSC

Analytical Batch Number: 1520789

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203426856	Method Blank (MB)
1203426858	Laboratory Control Sample (LCS)
1203426857	384742003(B33BW5) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-059 REV# 3.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples met the required acceptance limits.

Designated QC

The following sample was used for QC: 384742003 (B33BW5).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**C14_LSC: COMMON**
Analytical Method:	C14_LSC
Analytical Batch Number:	1520832

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203426975	Method Blank (MB)
1203426978	Laboratory Control Sample (LCS)
1203426976	384742003(B33BW5) Sample Duplicate (DUP)
1203426977	384742003(B33BW5) Matrix Spike (MS)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on an "as received" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-003 REV# 15.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used

before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

QC Information
All of the QC samples met the required acceptance limits.

Designated QC
The following sample was used for QC: 384742003 (B33BW5).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**TRITIUM_DIST_LSC: COMMON**
Analytical Method:	TRITIUM_DIST_LSC
Analytical Batch Number:	1521217

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203428057	Method Blank (MB)
1203428060	Laboratory Control Sample (LCS)
1203428058	384871003(B33BY1) Sample Duplicate (DUP)
1203428059	384871003(B33BY1) Matrix Spike (MS)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-002 REV# 21.

Calibration Information:

Calibration Information

All initial and continuing calibration requirements have been met.

Standards Information

Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry

All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information

The blank volume is representative of the sample volume in this batch.

QC Information

All of the QC samples met the required acceptance limits.

Designated QC

The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time

All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis

None of the samples in this sample set required reprep or reanalysis.

Recounts

Samples were recounted due to high recovery. The recounts are reported.

Miscellaneous Information:

Data Exception (DER) Documentation

Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
The matrix spike, 1203428059 (B33BY1MS), aliquot was reduced to conserve sample volume.

Qualifier Information

Manual qualifiers were not required.

Method/Analysis Information

Product:	**NI63_LSC: COMMON**
Analytical Method:	NI63_LSC
Prep Method:	Dry Soil Prep
Analytical Batch Number:	1521510
Prep Batch Number:	1521093

Sample ID	Client ID
384871003	B33BY1
384871004	B33BY5
384871005	B33BX7
384871006	B33BX4
1203428803	Method Blank (MB)
1203428805	Laboratory Control Sample (LCS)
1203428804	384871003(B33BY1) Sample Duplicate (DUP)

Samples 384871 003, 004, 005 and 006 in this SDG were analyzed on a "dry weight corrected" basis.
SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-RAD-A-022 REV# 17.

Calibration Information:

Calibration Information
All initial and continuing calibration requirements have been met.

Standards Information
Standard solutions for these analysis are NIST traceable or verified with a NIST traceable standard and used before the expiration dates.

Sample Geometry
All counting sources were prepared in the same geometry as the calibration standards.

Quality Control (QC) Information:

Blank Information
The blank volume is representative of the sample volume in this batch.

QC Information
All of the QC samples met the required acceptance limits.

Designated QC
The following sample was used for QC: 384871003 (B33BY1).

Technical Information:

Holding Time
All sample procedures for this sample set were performed within the required holding time.

Sample Re-prep/Re-analysis
None of the samples in this sample set required reprep or reanalysis.

Recounts
None of the samples in this sample set were recounted.

Miscellaneous Information:

Data Exception (DER) Documentation
Data exception reports are generated to document any procedural anomalies that may deviate from referenced SOP or contractual documents. A data exception report (DER) was not generated for this SDG.

Sample-Specific MDA/MDC
The MDA/MDC reported on the certificate of analysis is a sample-specific MDA/MDC.

Additional Comments
Additional comments were not required for this sample set.

Qualifier Information

Manual qualifiers were not required.

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report
for

CPRC001 CH2MHill Plateau Remediation Company

Client SDG: GEL384871 GEL Work Order: 384871

The Qualifiers in this report are defined as follows:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: Heather McCarty **Name:** **Heather McCarty**

Date: **18 NOV 2015** **Title:** **Analyst II**

GEL Laboratories LLC
Form GEL-DER

DER Report No.: 1466953
Revision No.: 2

DATA EXCEPTION REPORT

Mo.Day Yr.	Division:	Quality Criteria:	Type:
15-NOV-15	Radiochemistry	SOP	Process
Instrument Type:	**Test / Method:**	**Matrix Type:**	**Client Code:**
ALPHA SPECTROMETER	DOE EML HASL-300, U-02-RC Modified	Solid	CPRC
Batch ID:	**Sample Numbers:**		
1521177	See Below		

Potentially affected work order(s)(SDG): 384871(GEL384871)

Application Issues:

Other

Specification and Requirements Exception Description:	DER Disposition:
1. Sample 384871004 does not meet the resolution requirement of having a full width half maximum of 100 keV or less for the U-232 tracer.	1. The sample does meet the tracer yield requirement, the detection limits, and its tracer peak is within the U-232 region of interest. Reporting results.

Originator's Name:
Melanie Aycock 15-NOV-15

Data Validator/Group Leader:
Jessica Downey 16-NOV-15

Sample Data Summary

GEL Laboratories LLC

Report Date: November 18, 2015

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871001**	**Date Collected:**	**11/03/2015 12:10**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**0**

GEL Laboratories LLC

Report Date: November 18, 2015

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871002**	**Date Collected:**	**11/03/2015 12:10**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**5.5**

GEL Laboratories LLC

Report Date: November 18, 2015

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521174**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 13:12**	**Analyst:**	**JXR1**	**Instrument:**	**1066**
Data File:	**S0384871003_AM.1A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**240 min**
Prep Batch:	**1521174**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	0.0361	pCi/g	+/-0.233	0.233	0.477	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	18.4	20.4	pCi/g	90.3	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521175**	**Method:**	**ASTM C 1476-00 Modified**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**11/13/2015 09:11**	**Analyst:**	**JXR1**	**Instrument:**	**1025**
Data File:	**S0384871003_NP.1A.gcnf**	**Aliquot:**	**0.109 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521175**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	-0.00822	pCi/g	+/-0.190	0.191	0.431	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1850	1790	pCi/g	103	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

Rad
Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521176**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/16/2015 09:47**	**Analyst:**	**JXR1**	**Instrument:**	**1099**
Data File:	**S0384871003_PU.2A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**240 min**
Prep Batch:	**1521176**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	0.253	pCi/g	+/-0.380	0.383	0.592	1.00
OER-100-70	Plutonium-239/240	U	0.137	pCi/g	+/-0.312	0.313	0.535	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-236 Tracer	8.34	12.6	pCi/g	66.3	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521177**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/12/2015 09:49**	**Analyst:**	**JXR1**	**Instrument:**	**1013**
Data File:	**S0384871003_UU.1A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521177**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234		0.578	pCi/g	+/-0.365	0.375	0.313	1.00
15117-96-1/13982-7	Uranium-235/236	U	-0.0152	pCi/g	+/-0.131	0.131	0.304	1.00
7440-61-1	Uranium-238		0.910	pCi/g	+/-0.439	0.460	0.246	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	20.0	20.1	pCi/g	99.1	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521277**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**11/12/2015 17:34**	**Analyst:**	**KSD1**	**Instrument:**	**PIC6C**
Data File:	**S1521277.xls**	**Aliquot:**	**0.509 g**	**Count Time:**	**60 min**
Prep Batch:	**1521277**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	0.795	pCi/g	+/-0.620	0.653	1.00	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.80	8.10	mg	96.3	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521145**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**11/09/2015 12:03**	**Analyst:**	**RXF2**	**Instrument:**	**GAM08**
Data File:	**G384871003.CNF;1**	**Aliquot:**	**49.384 g**	**Count Time:**	**120 min**
Prep Batch:	**1521145**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137	U	0.046	pCi/g	+/-0.0504	0.0505	0.0927	0.100
10198-40-0	Cobalt-60	U	0.0257	pCi/g	+/-0.0437	0.0452	0.0949	
14683-23-9	Europium-152	U	-0.0443	pCi/g	+/-0.118	0.120	0.193	
15585-10-1	Europium-154	U	0.0355	pCi/g	+/-0.134	0.135	0.265	
14391-16-3	Europium-155	UX	0.00	pCi/g	+/-0.152	0.153	0.195	

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521171**	**Method:**	**DOE EML HASL-300,I-01 Mo**	**SOP Ref:**	**GL-RAD-A-006**
Run Date:	**11/10/2015 07:24**	**Analyst:**	**MJH1**	**Instrument:**	**XRAY2**
Data File:	**I384871003.CNF;1**	**Aliquot:**	**1.128 g**	**Count Time:**	**30 min**
Prep Batch:	**1521171**	**Prep Method:**	**DOE EML HASL-300,I-01 M**		
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
15046-84-1	Iodine-129	U	-0.11	pCi/g	+/-0.873	0.874	1.77	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520789**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**11/10/2015 11:44**	**Analyst:**	**MYM1**	**Instrument:**	**LSCGREEN**
Data File:	**E1520789.xls**	**Aliquot:**	**0.367 g**	**Count Time:**	**30 min**
Prep Batch:	**1520789**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**11/06/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-3.24	pCi/g	+/-4.79	4.79	8.49	15.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	41300	41700	CPM	99	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520832**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**11/14/2015 10:51**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCSILVER**
Data File:	**C1520832.xls**	**Aliquot:**	**0.862 g**	**Count Time:**	**45 min**
Prep Batch:	**1520832**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**11/13/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	-0.97	pCi/g	+/-1.26	1.26	2.20	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521217**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**11/15/2015 10:37**	**Analyst:**	**GXR1**	**Instrument:**	**LSCYELLOW**
Data File:	**T1521217R2.xls**	**Aliquot:**	**1.384 g**	**Count Time:**	**15 min**
Prep Batch:	**1521217**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**11/12/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	-10.1	pCi/g	+/-9.69	9.69	20.1	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**
Client ID:	**B33BY1**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521510**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**11/12/2015 21:17**	**Analyst:**	**TYJ1**	**Instrument:**	**LSCBLUE**
Data File:	**N1521510.xls**	**Aliquot:**	**0.243 g**	**Count Time:**	**30 min**
Prep Batch:	**1521510**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/11/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	3.60	pCi/g	+/-9.63	9.65	16.4	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	17.8	26.6	mg	66.9	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
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TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871003**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.6**

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521174**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 13:12**	**Analyst:**	**JXR1**	**Instrument:**	**1067**
Data File:	**S0384871004_AM.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**240 min**
Prep Batch:	**1521174**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	0.298	pCi/g	+/-0.341	0.343	0.426	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	17.3	21.0	pCi/g	82.6	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521175**	**Method:**	**ASTM C 1476-00 Modified**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**11/13/2015 09:11**	**Analyst:**	**JXR1**	**Instrument:**	**1027**
Data File:	**S0384871004_NP.1A.gcnf**	**Aliquot:**	**0.11 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521175**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	-0.0921	pCi/g	+/-0.116	0.116	0.387	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1880	1780	pCi/g	106	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521176**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 17:25**	**Analyst:**	**JXR1**	**Instrument:**	**1103**
Data File:	**S0384871004_PU.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**504.9998 min**
Prep Batch:	**1521176**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	0.0675	pCi/g	+/-0.200	0.200	0.362	1.00
OER-100-70	Plutonium-239/240	U	0.294	pCi/g	+/-0.322	0.324	0.481	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-236 Tracer	7.45	12.9	pCi/g	57.5	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521177**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/12/2015 09:49**	**Analyst:**	**JXR1**	**Instrument:**	**1014**
Data File:	**S0384871004_UU.1A.gcnf**	**Aliquot:**	**0.102 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521177**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234	U	0.322	pCi/g	+/-0.306	0.310	0.323	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.127	pCi/g	+/-0.249	0.250	0.346	1.00
7440-61-1	Uranium-238	U	0.119	pCi/g	+/-0.237	0.237	0.384	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	19.9	20.7	pCi/g	96.1	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521277**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**11/12/2015 17:34**	**Analyst:**	**KSD1**	**Instrument:**	**PIC8D**
Data File:	**S1521277.xls**	**Aliquot:**	**0.508 g**	**Count Time:**	**60 min**
Prep Batch:	**1521277**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	-0.653	pCi/g	+/-0.578	0.578	1.16	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.30	8.10	mg	90.1	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521145**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**11/09/2015 12:03**	**Analyst:**	**RXF2**	**Instrument:**	**GAM06**
Data File:	**G384871004.CNF;1**	**Aliquot:**	**147.169 g**	**Count Time:**	**120 min**
Prep Batch:	**1521145**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137	U	0.00547	pCi/g	+/-0.0206	0.0207	0.0406	0.100
10198-40-0	Cobalt-60	U	0.00725	pCi/g	+/-0.0194	0.0196	0.0424	
14683-23-9	Europium-152	U	0.0328	pCi/g	+/-0.0515	0.0537	0.0941	
15585-10-1	Europium-154	U	0.0423	pCi/g	+/-0.0596	0.0627	0.132	
14391-16-3	Europium-155	U	0.0277	pCi/g	+/-0.054	0.0555	0.105	

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521171**	**Method:**	**DOE EML HASL-300,I-01 Mo**	**SOP Ref:**	**GL-RAD-A-006**
Run Date:	**11/10/2015 07:40**	**Analyst:**	**MJH1**	**Instrument:**	**XRAY5**
Data File:	**I384871004.CNF;2**	**Aliquot:**	**1.044 g**	**Count Time:**	**90 min**
Prep Batch:	**1521171**	**Prep Method:**	**DOE EML HASL-300,I-01 M**		
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
15046-84-1	Iodine-129	U	0.178	pCi/g	+/-0.548	0.554	1.27	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520789**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**11/10/2015 12:16**	**Analyst:**	**MYM1**	**Instrument:**	**LSCGREEN**
Data File:	**E1520789.xls**	**Aliquot:**	**0.317 g**	**Count Time:**	**30 min**
Prep Batch:	**1520789**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**11/06/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-5.65	pCi/g	+/-5.42	5.42	9.74	15.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	40200	41700	CPM	96.4	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520832**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**11/14/2015 11:38**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCSILVER**
Data File:	**C1520832.xls**	**Aliquot:**	**0.786 g**	**Count Time:**	**45 min**
Prep Batch:	**1520832**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**11/13/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	0.655	pCi/g	+/-1.42	1.42	2.42	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521217**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**11/15/2015 10:53**	**Analyst:**	**GXR1**	**Instrument:**	**LSCYELLOW**
Data File:	**T1521217R2.xls**	**Aliquot:**	**1.279 g**	**Count Time:**	**15 min**
Prep Batch:	**1521217**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**11/12/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	0.773	pCi/g	+/-11.7	11.7	21.5	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**
Client ID:	**B33BY5**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521510**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**11/12/2015 21:48**	**Analyst:**	**TYJ1**	**Instrument:**	**LSCBLUE**
Data File:	**N1521510.xls**	**Aliquot:**	**0.214 g**	**Count Time:**	**30 min**
Prep Batch:	**1521510**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/11/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	2.91	pCi/g	+/-10.9	10.9	18.7	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	17.8	26.6	mg	66.9	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871004**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**.5**

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521174**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 13:12**	**Analyst:**	**JXR1**	**Instrument:**	**1068**
Data File:	**S0384871005_AM.1A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**240 min**
Prep Batch:	**1521174**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	0.023	pCi/g	+/-0.241	0.241	0.503	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	16.3	20.4	pCi/g	79.9	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521175**	**Method:**	**ASTM C 1476-00 Modified**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**11/13/2015 09:11**	**Analyst:**	**JXR1**	**Instrument:**	**1028**
Data File:	**S0384871005_NP.1A.gcnf**	**Aliquot:**	**0.104 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521175**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	0.162	pCi/g	+/-0.314	0.314	0.539	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1880	1880	pCi/g	99.9	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521176**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 17:25**	**Analyst:**	**JXR1**	**Instrument:**	**1104**
Data File:	**S0384871005_PU.1A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**504.9998 min**
Prep Batch:	**1521176**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	0.194	pCi/g	+/-0.226	0.227	0.334	1.00
OER-100-70	Plutonium-239/240	U	0.194	pCi/g	+/-0.241	0.242	0.376	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-236 Tracer	9.19	12.6	pCi/g	73.1	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521177**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/12/2015 09:49**	**Analyst:**	**JXR1**	**Instrument:**	**1015**
Data File:	**S0384871005_UU.1A.gcnf**	**Aliquot:**	**0.105 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521177**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234		0.929	pCi/g	+/-0.448	0.470	0.251	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.0336	pCi/g	+/-0.187	0.187	0.358	1.00
7440-61-1	Uranium-238	U	0.249	pCi/g	+/-0.254	0.256	0.251	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	20.5	20.1	pCi/g	102	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521277**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**11/12/2015 17:36**	**Analyst:**	**KSD1**	**Instrument:**	**PIC11A**
Data File:	**S1521277.xls**	**Aliquot:**	**0.525 g**	**Count Time:**	**60 min**
Prep Batch:	**1521277**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	-0.198	pCi/g	+/-0.393	0.394	0.795	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.70	8.10	mg	95.1	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521145**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**11/09/2015 12:03**	**Analyst:**	**RXF2**	**Instrument:**	**GAM09**
Data File:	**G384871005.CNF;1**	**Aliquot:**	**136.428 g**	**Count Time:**	**120 min**
Prep Batch:	**1521145**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137	U	-0.0133	pCi/g	+/-0.0293	0.0299	0.0504	0.100
10198-40-0	Cobalt-60	U	-0.0197	pCi/g	+/-0.0277	0.0291	0.0484	
14683-23-9	Europium-152	U	0.0218	pCi/g	+/-0.0695	0.0702	0.134	
15585-10-1	Europium-154	U	-0.000269	pCi/g	+/-0.0932	0.0932	0.174	
14391-16-3	Europium-155	U	0.0365	pCi/g	+/-0.0685	0.0705	0.135	

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520789**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**11/10/2015 12:48**	**Analyst:**	**MYM1**	**Instrument:**	**LSCGREEN**
Data File:	**E1520789.xls**	**Aliquot:**	**0.352 g**	**Count Time:**	**30 min**
Prep Batch:	**1520789**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**11/06/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	-3.67	pCi/g	+/-5.07	5.07	9.01	15.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	40500	41700	CPM	97	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520832**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**11/14/2015 12:25**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCSILVER**
Data File:	**C1520832.xls**	**Aliquot:**	**0.919 g**	**Count Time:**	**45 min**
Prep Batch:	**1520832**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**11/13/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	0.964	pCi/g	+/-1.23	1.23	2.07	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521217**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**11/15/2015 11:10**	**Analyst:**	**GXR1**	**Instrument:**	**LSCYELLOW**
Data File:	**T1521217R2.xls**	**Aliquot:**	**1.308 g**	**Count Time:**	**15 min**
Prep Batch:	**1521217**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**11/12/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	-9.88	pCi/g	+/-10.1	10.1	20.8	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**
Client ID:	**B33BX7**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521510**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**11/12/2015 22:20**	**Analyst:**	**TYJ1**	**Instrument:**	**LSCBLUE**
Data File:	**N1521510.xls**	**Aliquot:**	**0.219 g**	**Count Time:**	**30 min**
Prep Batch:	**1521510**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/11/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	5.48	pCi/g	+/-10.4	10.5	17.8	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	18.4	26.6	mg	69.2	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871005**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.1**

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521174**	**Method:**	**AMCMISO_EIE_PREC_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/11/2015 13:12**	**Analyst:**	**JXR1**	**Instrument:**	**1069**
Data File:	**S0384871006_AM.1A.gcnf**	**Aliquot:**	**0.109 g**	**Count Time:**	**240 min**
Prep Batch:	**1521174**	**Prep Method:**	**DOE EML HASL-300, Am-05**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14596-10-2	Americium-241	U	-0.0353	pCi/g	+/-0.156	0.156	0.407	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	14.4	19.6	pCi/g	73.1	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521175**	**Method:**	**ASTM C 1476-00 Modified**	**SOP Ref:**	**GL-RAD-A-032**
Run Date:	**11/13/2015 09:11**	**Analyst:**	**JXR1**	**Instrument:**	**1029**
Data File:	**S0384871006_NP.1A.gcnf**	**Aliquot:**	**0.107 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521175**	**Prep Method:**	**ASTM C 1476-00 Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13994-20-2	Neptunium-237	U	0.0303	pCi/g	+/-0.196	0.196	0.400	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Americium-243 Tracer	1910	1830	pCi/g	105	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521176**	**Method:**	**PUISO_PLATE_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/16/2015 09:47**	**Analyst:**	**JXR1**	**Instrument:**	**1100**
Data File:	**S0384871006_PU.2A.gcnf**	**Aliquot:**	**0.109 g**	**Count Time:**	**240 min**
Prep Batch:	**1521176**	**Prep Method:**	**DOE EML HASL-300, Pu-11-**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
13981-16-3	Plutonium-238	U	0.255	pCi/g	+/-0.320	0.322	0.482	1.00
OER-100-70	Plutonium-239/240	U	0.224	pCi/g	+/-0.273	0.275	0.366	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Plutonium-236 Tracer	12.1	12.1	pCi/g	100	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Certificate of Analysis
Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521177**	**Method:**	**UISO_IE_PRECIP_AEA**	**SOP Ref:**	**GL-RAD-A-011**
Run Date:	**11/12/2015 09:49**	**Analyst:**	**JXR1**	**Instrument:**	**1016**
Data File:	**S0384871006_UU.1A.gcnf**	**Aliquot:**	**0.109 g**	**Count Time:**	**239.9998 min**
Prep Batch:	**1521177**	**Prep Method:**	**DOE EML HASL-300, U-02-R**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/10/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
U-233/234 *13968-55-3/13966-29-5*	Uranium-233/234		0.518	pCi/g	+/-0.374	0.382	0.400	1.00
15117-96-1/13982-7	Uranium-235/236	U	0.0348	pCi/g	+/-0.193	0.194	0.371	1.00
7440-61-1	Uranium-238		0.613	pCi/g	+/-0.403	0.414	0.419	1.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Uranium-232 Tracer	18.5	19.4	pCi/g	95.2	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521277**	**Method:**	**SRTOT_SEP_PRECIP_GPC**	**SOP Ref:**	**GL-RAD-A-004**
Run Date:	**11/12/2015 17:36**	**Analyst:**	**KSD1**	**Instrument:**	**PIC11B**
Data File:	**S1521277.xls**	**Aliquot:**	**0.516 g**	**Count Time:**	**60 min**
Prep Batch:	**1521277**	**Prep Method:**	**EPA 905.0 Modified/DOE RP5**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
SR-RAD	Total Strontium	U	-0.363	pCi/g	+/-0.374	0.374	0.794	2.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Strontium Carrier	7.60	8.10	mg	93.8	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521145**	**Method:**	**GAMMA_GS**	**SOP Ref:**	**GL-RAD-A-013**
Run Date:	**11/09/2015 12:04**	**Analyst:**	**RXF2**	**Instrument:**	**GAM11**
Data File:	**G384871006.CNF;1**	**Aliquot:**	**147.051 g**	**Count Time:**	**120 min**
Prep Batch:	**1521145**	**Prep Method:**	**DOE HASL 300, 4.5.2.3/Ga-01**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/09/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10045-97-3	Cesium-137		0.113	pCi/g	+/-0.045	0.0459	0.048	0.100
10198-40-0	Cobalt-60	U	0.0207	pCi/g	+/-0.0241	0.0259	0.0473	
14683-23-9	Europium-152	U	0.0176	pCi/g	+/-0.0651	0.0656	0.119	
15585-10-1	Europium-154	U	-0.0162	pCi/g	+/-0.077	0.0773	0.142	
14391-16-3	Europium-155	U	0.0412	pCi/g	+/-0.0763	0.0786	0.129	

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520789**	**Method:**	**TC99_EIE_LSC**	**SOP Ref:**	**GL-RAD-A-059**
Run Date:	**11/10/2015 13:20**	**Analyst:**	**MYM1**	**Instrument:**	**LSCGREEN**
Data File:	**E1520789.xls**	**Aliquot:**	**0.361 g**	**Count Time:**	**30 min**
Prep Batch:	**1520789**	**Prep Method:**	**DOE EML HASL-300, Tc-02-**		
Prep Date:	**11/06/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14133-76-7	Technetium-99	U	1.05	pCi/g	+/-4.99	4.99	8.58	15.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Technetium-99m Tracer	41700	41700	CPM	99.8	(15%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"As Received"**
Batch ID:	**1520832**	**Method:**	**C14_LSC**	**SOP Ref:**	**GL-RAD-A-003**
Run Date:	**11/14/2015 13:12**	**Analyst:**	**TXJ1**	**Instrument:**	**LSCSILVER**
Data File:	**C1520832.xls**	**Aliquot:**	**0.911 g**	**Count Time:**	**45 min**
Prep Batch:	**1520832**	**Prep Method:**	**EPA EERF C-01 Modified**		
Prep Date:	**11/13/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
14762-75-5	Carbon-14	U	0.318	pCi/g	+/-1.22	1.22	2.09	5.00

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"As Received"**
Batch ID:	**1521217**	**Method:**	**TRITIUM_DIST_LSC**	**SOP Ref:**	**GL-RAD-A-002**
Run Date:	**11/15/2015 11:26**	**Analyst:**	**GXR1**	**Instrument:**	**LSCYELLOW**
Data File:	**T1521217R2.xls**	**Aliquot:**	**1.544 g**	**Count Time:**	**15 min**
Prep Batch:	**1521217**	**Prep Method:**	**EPA 906.0 Modified**		
Prep Date:	**11/12/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
10028-17-8	Tritium	U	-2.09	pCi/g	+/-9.65	9.65	18.3	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**
Client ID:	**B33BX4**			**Prep Basis:**	**"Dry Weight Corrected"**
Batch ID:	**1521510**	**Method:**	**NI63_LSC**	**SOP Ref:**	**GL-RAD-A-022**
Run Date:	**11/12/2015 22:52**	**Analyst:**	**TYJ1**	**Instrument:**	**LSCBLUE**
Data File:	**N1521510.xls**	**Aliquot:**	**0.207 g**	**Count Time:**	**30 min**
Prep Batch:	**1521510**	**Prep Method:**	**DOE RESL Ni-1, Modified**	**Prep SOP Ref:**	**GL-RAD-A-021**
Prep Date:	**11/11/2015 00:00**				

CAS No.	Parmname	Qual	Result	Units	Uncert	TPU	MDC	RDL
NI-63	Nickel-63	U	13.8	pCi/g	+/-12.9	13.1	21.5	30.0

Surrogate/Tracer recovery	Result	Nominal	Units	Recovery%	Acceptable Limits
Nickel Carrier	16.0	26.6	mg	60.2	(25%-125%)

Comments:

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871006**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**

GEL Laboratories LLC

Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871007**	**Date Collected:**	**11/04/2015 09:05**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**2.3**

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871008**	**Date Collected:**	**11/04/2015 08:00**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**0**

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871009**	**Date Collected:**	**11/04/2015 07:50**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**3.5**

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Report Date: November 18, 2015

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Sample Summary

SDG Number:	**GEL384871**	**Client:**	**CPRC001**	**Project:**	**CPRC0F15011**
Lab Sample ID:	**384871010**	**Date Collected:**	**11/04/2015 08:20**	**Matrix:**	**SOIL**
		Date Received:	**11/05/2015 09:00**	**%Moisture:**	**4.5**

Quality Control Data

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Client : CH2MHill Plateau Remediation Company
MSIN R3-50 CHPRC
PO Box 1600
Richland, Washington 99352
Contact: Mr. Scot Fitzgerald

Workorder: 384871

Report Date: November 18, 2015

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1521174									
QC1203427939 MB									
Americium-241			U	-0.0143	pCi/g			JXR1	11/11/1513:12
Uncert:				+/-0.124					
TPU:				+/-0.124					
**Americium-243 Tracer	19.6			20.7	pCi/g	REC: 105	(15%-125%)		
Uncert:				+/-2.11					
TPU:				+/-3.19					
QC1203427940 384871003 DUP									
Americium-241	U	0.0361	U	0.0161	pCi/g				
Uncert:		+/-0.233		+/-0.168		RPD: 0	N/A		
TPU:		+/-0.233		+/-0.169		RER: 0.136	(0-2)		
**Americium-243 Tracer	20.4	18.4		18.9	pCi/g	REC: 93	(15%-125%)		
Uncert:		+/-2.24		+/-2.11					
TPU:		+/-3.38		+/-3.21					
QC1203427941 LCS									
Americium-241	18.1			16.1	pCi/g	REC: 89	(80%-120%)		11/11/1513:11
Uncert:				+/-2.27					
TPU:				+/-3.19					
**Americium-243 Tracer	19.6			15.8	pCi/g	REC: 80	(15%-125%)		
Uncert:				+/-2.49					
TPU:				+/-3.70					
Batch 1521175									
QC1203427942 MB									
Neptunium-237			U	-0.0348	pCi/g			JXR1	11/13/1509:11
Uncert:				+/-0.157					
TPU:				+/-0.158					
**Americium-243 Tracer	1780			1830	pCi/g	REC: 103	(15%-125%)		
QC1203427943 384871003 DUP									
Neptunium-237	U	-0.00822	U	-0.039	pCi/g				
Uncert:		+/-0.190		+/-0.118		RPD: 0	N/A		
TPU:		+/-0.191		+/-0.118		RER: 0.269	(0-2)		
**Americium-243 Tracer	1920	1850		1900	pCi/g	REC: 99	(15%-125%)		
QC1203427944 LCS									
Neptunium-237	40.6			41.3	pCi/g	REC: 102	(80%-120%)		11/13/1509:11
Uncert:				+/-2.99					
TPU:				+/-5.39					
**Americium-243 Tracer	1780			1930	pCi/g	REC: 109	(15%-125%)		
Batch 1521176									
QC1203427945 MB									
Plutonium-238			U	0.0736	pCi/g			JXR1	11/16/1509:44
Uncert:				+/-0.330					
TPU:				+/-0.330					
Plutonium-239/240			U	0.379	pCi/g				
Uncert:				+/-0.533					

GEL LABORATORIES LLC
2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Workorder: 384871

Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1521176									
	TPU:			+/-0.538					
**Plutonium-236 Tracer	12.1			8.59	pCi/g	REC: 71	(15%-125%)		
	Uncert:			+/-2.08					
	TPU:			+/-3.02					
QC1203427946 384871003 DUP									
Plutonium-238	U	0.253	U	0.0603	pCi/g				11/11/1516:28
	Uncert:	+/-0.380		+/-0.178		RPD: 0	N/A		
	TPU:	+/-0.383		+/-0.178		RER: 0.897	(0-2)		
Plutonium-239/240	U	0.137	U	0.0599	pCi/g				
	Uncert:	+/-0.312		+/-0.203		RPD: 0	N/A		
	TPU:	+/-0.313		+/-0.203		RER: 0.407	(0-2)		
**Plutonium-236 Tracer	12.6	8.34		10.2	pCi/g	REC: 81	(15%-125%)		
	Uncert:	+/-1.94		+/-1.41					
	TPU:	+/-2.85		+/-2.13					
QC1203427947 LCS									
Plutonium-238			U	0.0867	pCi/g				11/11/1516:28
	Uncert:			+/-0.241					
	TPU:			+/-0.241					
Plutonium-239/240	18.1			21.7	pCi/g	REC: 120	(80%-120%)		
	Uncert:			+/-1.93					
	TPU:			+/-3.47					
**Plutonium-236 Tracer	12.1			8.76	pCi/g	REC: 73	(15%-125%)		
	Uncert:			+/-1.44					
	TPU:			+/-2.15					
Batch 1521177									
QC1203427948 MB									
Uranium-233/234			U	0.148	pCi/g			JXR1	11/12/1509:49
	Uncert:			+/-0.213					
	TPU:			+/-0.214					
Uranium-235/236			U	-0.0318	pCi/g				
	Uncert:			+/-0.141					
	TPU:			+/-0.141					
Uranium-238			U	0.0407	pCi/g				
	Uncert:			+/-0.153					
	TPU:			+/-0.153					
**Uranium-232 Tracer	19.4			19.4	pCi/g	REC: 100	(15%-125%)		
	Uncert:			+/-2.02					
	TPU:			+/-3.60					
QC1203427949 384871003 DUP									
Uranium-233/234		0.578		0.423	pCi/g				
	Uncert:	+/-0.365		+/-0.330		RPD: 31	(0% - 100%)		
	TPU:	+/-0.375		+/-0.337		RER: 0.605	(0-2)		
Uranium-235/236	U	-0.0152	U	0.130	pCi/g				
	Uncert:	+/-0.131		+/-0.223		RPD: 0	N/A		
	TPU:	+/-0.131		+/-0.224		RER: 1.1	(0-2)		
Uranium-238		0.910		0.816	pCi/g				
	Uncert:	+/-0.439		+/-0.427		RPD: 11	(0% - 100%)		
	TPU:	+/-0.460		+/-0.444		RER: 0.29	(0-2)		
**Uranium-232 Tracer	20.1	20.0		21.9	pCi/g	REC: 109	(15%-125%)		
	Uncert:	+/-2.02		+/-2.05					

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Alpha Spec									
Batch 1521177									
TPU:		+/-3.65		+/-3.69					
QC1203427950 LCS									
Uranium-233/234				23.4	pCi/g				11/12/1510:37
Uncert:				+/-2.82					
TPU:				+/-4.92					
Uranium-235/236				1.39	pCi/g				
Uncert:				+/-0.799					
TPU:				+/-0.835					
Uranium-238	24.7			23.8	pCi/g	REC: 96	(80%-120%)		
Uncert:				+/-2.84					
TPU:				+/-5.00					
**Uranium-232 Tracer	19.4			18.6	pCi/g	REC: 96	(15%-125%)		
Uncert:				+/-2.59					
TPU:				+/-4.26					
Rad Gamma Spec									
Batch 1521145									
QC1203427841 MB									
Cesium-137			U	-0.0106	pCi/g			RXF2	11/09/1512:04
Uncert:				+/-0.0186					
TPU:				+/-0.0192					
Cobalt-60			U	0.00496	pCi/g				
Uncert:				+/-0.0143					
TPU:				+/-0.0145					
Europium-152			U	0.0293	pCi/g				
Uncert:				+/-0.0517					
TPU:				+/-0.0534					
Europium-154			U	-0.0118	pCi/g				
Uncert:				+/-0.0537					
TPU:				+/-0.054					
Europium-155			U	0.00613	pCi/g				
Uncert:				+/-0.0507					
TPU:				+/-0.0508					
QC1203427842 384871004 DUP									
Cesium-137	U	0.00547	U	0.0167	pCi/g				11/09/1518:21
Uncert:		+/-0.0206		+/-0.020		RPD: 0	N/A		
TPU:		+/-0.0207		+/-0.0214		RER: 0.737	(0-2)		
Cobalt-60	U	0.00725	U	-0.0198	pCi/g				
Uncert:		+/-0.0194		+/-0.0202		RPD: 0	N/A		
TPU:		+/-0.0196		+/-0.0222		RER: 1.79	(0-2)		
Europium-152	U	0.0328	U	0.0179	pCi/g				
Uncert:		+/-0.0515		+/-0.0598		RPD: 0	N/A		
TPU:		+/-0.0537		+/-0.0604		RER: 0.362	(0-2)		
Europium-154	U	0.0423	U	-0.015	pCi/g				
Uncert:		+/-0.0596		+/-0.0681		RPD: 0	N/A		
TPU:		+/-0.0627		+/-0.0684		RER: 1.21	(0-2)		
Europium-155	U	0.0277	U	-0.0146	pCi/g				
Uncert:		+/-0.054		+/-0.059		RPD: 0	N/A		
TPU:		+/-0.0555		+/-0.0594		RER: 1.02	(0-2)		
QC1203427843 LCS									
Americium-241	490			528	pCi/g	REC: 108	(80%-120%)		11/09/1512:05

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gamma Spec									
Batch 1521145									
	Uncert:			+/-8.98					
	TPU:			+/-62.3					
Cesium-137	183			175	pCi/g	REC: 96	(80%-120%)		
	Uncert:			+/-3.19					
	TPU:			+/-14.7					
Cobalt-60	181			168	pCi/g	REC: 93	(80%-120%)		
	Uncert:			+/-3.60					
	TPU:			+/-14.0					
Europium-152			U	-0.474	pCi/g				
	Uncert:			+/-1.74					
	TPU:			+/-1.75					
Europium-154			U	0.136	pCi/g				
	Uncert:			+/-1.16					
	TPU:			+/-1.16					
Europium-155			U	0.0649	pCi/g				
	Uncert:			+/-1.77					
	TPU:			+/-1.77					
Batch 1521171									
QC1203427932 MB									
Iodine-129			U	-0.541	pCi/g			MJH1	11/10/1508:29
	Uncert:			+/-0.690					
	TPU:			+/-0.734					
QC1203427933 384742003 DUP									
Iodine-129	U	-0.31	U	0.222	pCi/g				11/10/1508:30
	Uncert:	+/-0.608		+/-0.757		RPD: 0	N/A		
	TPU:	+/-0.625		+/-0.764		RER: 1.06	(0-2)		
QC1203427934 384742003 MS									
Iodine-129	41.5 U	-0.31		32.3	pCi/g	REC: 78	(75%-125%)		11/10/1509:35
	Uncert:	+/-0.608		+/-4.47					
	TPU:	+/-0.625		+/-5.50					
QC1203427935 LCS									
Iodine-129	36.9			31.0	pCi/g	REC: 84	(80%-120%)		11/10/1509:36
	Uncert:			+/-5.39					
	TPU:			+/-6.22					
Rad Gas Flow									
Batch 1521277									
QC1203428206 MB									
Total Strontium			U	-0.383	pCi/g			KSD1	11/12/1517:36
	Uncert:			+/-0.281					
	TPU:			+/-0.281					
**Strontium Carrier	8.10			8.30	mg	REC: 102	(25%-125%)		
QC1203428207 384871003 DUP									
Total Strontium	U	0.795	U	-0.327	pCi/g				11/12/1517:36
	Uncert:	+/-0.620		+/-0.292		RPD: 0	N/A		
	TPU:	+/-0.653		+/-0.292		RER: 3.07	(0-2)		
**Strontium Carrier	8.10	7.80		7.90	mg	REC: 98	(25%-125%)		
QC1203428208 LCS									
Total Strontium	38.5			34.8	pCi/g	REC: 90	(80%-120%)		11/12/1517:36
	Uncert:			+/-1.87					
	TPU:			+/-9.00					

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Gas Flow									
Batch 1521277									
**Strontium Carrier	8.10			7.70	mg	REC: 95	(25%-125%)		
Rad Liquid Scintillation									
Batch 1520789									
QC1203426856 MB									
Technetium-99			U	-2.45	pCi/g			MYM1	11/10/1513:52
Uncert:				+/-4.71					
TPU:				+/-4.71					
**Technetium-99m Tracer	41700			40300	CPM	REC: 97	(15%-125%)		
QC1203426857 384742003 DUP									
Technetium-99	U	-0.754	U	-3.05	pCi/g				11/10/1514:24
Uncert:		+/-4.59		+/-5.73		RPD: 0	N/A		
TPU:		+/-4.59		+/-5.73		RER: 0.613	(0-2)		
**Technetium-99m Tracer	41700	41300		40600	CPM	REC: 97	(15%-125%)		
QC1203426858 LCS									
Technetium-99	221			199	pCi/g	REC: 90	(80%-120%)		11/10/1514:56
Uncert:				+/-9.43					
TPU:				+/-25.0					
**Technetium-99m Tracer	41700			40400	CPM	REC: 97	(15%-125%)		
Batch 1520832									
QC1203426975 MB									
Carbon-14			U	-0.406	pCi/g			TXJ1	11/14/1513:59
Uncert:				+/-1.19					
TPU:				+/-1.19					
QC1203426976 384742003 DUP									
Carbon-14	U	-0.654	U	-1.49	pCi/g				11/14/1514:47
Uncert:		+/-1.29		+/-1.39		RPD: 0	N/A		
TPU:		+/-1.29		+/-1.39		RER: 0.868	(0-2)		
QC1203426977 384742003 MS									
Carbon-14	142 U	-0.654		138	pCi/g	REC: 98	(75%-125%)		11/14/1515:34
Uncert:		+/-1.29		+/-4.32					
TPU:		+/-1.29		+/-11.1					
QC1203426978 LCS									
Carbon-14	82.4			80.8	pCi/g	REC: 98	(80%-120%)		11/14/1516:21
Uncert:				+/-2.52					
TPU:				+/-6.43					
Batch 1521217									
QC1203428057 MB									
Tritium			U	-6.68	pCi/g			GXR1	11/15/1511:42
Uncert:				+/-8.91					
TPU:				+/-8.92					
QC1203428058 384871003 DUP									
Tritium	U	-10.1	U	1.48	pCi/g				11/15/1511:58
Uncert:		+/-9.69		+/-10.9		RPD: 0	N/A		
TPU:		+/-9.69		+/-10.9		RER: 1.55	(0-2)		
QC1203428059 384871003 MS									
Tritium	189 U	-10.1		156	pCi/g	REC: 83	(75%-125%)		11/15/1512:15
Uncert:		+/-9.69		+/-37.1					
TPU:		+/-9.69		+/-51.4					
QC1203428060 LCS									
						REC:			

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Parmname	NOM	Sample	Qual	QC	Units	QC Criteria	Range	Analyst	Date Time
Rad Liquid Scintillation									
Batch 1521217									
Tritium	78.1			84.8	pCi/g	109	(80%-120%)		
	Uncert:			+/-16.8					
	TPU:			+/-25.5					
Batch 1521510									
QC1203428803 MB									
Nickel-63			U	-0.865	pCi/g			TYJ1	11/12/1523:23
	Uncert:			+/-9.20					
	TPU:			+/-9.20					
**Nickel Carrier	26.6			18.5	mg	REC: 70	(25%-125%)		
QC1203428804 384871003 DUP									
Nickel-63	U	3.60	U	2.92	pCi/g				11/12/1523:55
	Uncert:	+/-9.63		+/-9.69		RPD: 0	N/A		
	TPU:	+/-9.65		+/-9.70		RER: 0.0966	(0-2)		
**Nickel Carrier	26.6	17.8		17.9	mg	REC: 67	(25%-125%)		
QC1203428805 LCS									
Nickel-63	558			647	pCi/g	REC: 116	(80%-120%)		11/13/1500:27
	Uncert:			+/-22.0					
	TPU:			+/-123					
**Nickel Carrier	26.6			17.5	mg	REC: 66	(25%-125%)		

Notes:

TPU and Counting Uncertainty are calculated at the 95% confidence level (1.96-sigma).

The Qualifiers in this report are defined as follows:

*	Duplicate analysis not within control limits
+	Correlation coefficient for Method of Standard Additions (MSA) is < 0.995
<	Sample is below the EPA guidance level for Reactive Releasable Cyanide and/or Reactive Releasable Sulfide
>	Result greater than quantifiable range or greater than upper limit of the analysis range
A	The TIC is a suspected aldol-condensation product
B	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).
B	The analyte was detected in both the associated QC blank and in the sample.
B	The associated QC sample blank has a result >= 2X the MDA and, after corrections, result is >= MDA for this sample
C	Analyte has been confirmed by GC/MS analysis
C	Target analyte was detected in the sample and the associated blank. The associated blank concentration is >= EQL or is > 5% of the measured concentration and/or decision level for associated samples.
D	Results are reported from a diluted aliquot of sample.
E	Concentration exceeds the calibration range of the instrument
E	Reported value is estimated due to interferences. See comment in narrative.
J	The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate).Value is estimated
M	Duplicate precision not met.
N	Spike Sample recovery is outside control limits.
P	Aroclor target analyte with greater than 25% difference between column analyses.
S	Reported value determined by the Method of Standard Additions (MSA)
T	Spike and/or spike duplicate sample recovery is outside control limits.
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

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UX Gamma Spectroscopy--Uncertain identification

W Post-digestion spike recovery for GFAA out of control limit. Sample absorbency < 50% of spike absorbency.

X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier

o Analyte failed to recover within LCS limits (0rganics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
** Indicates analyte is a surrogate compound.
^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptence criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.
For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.